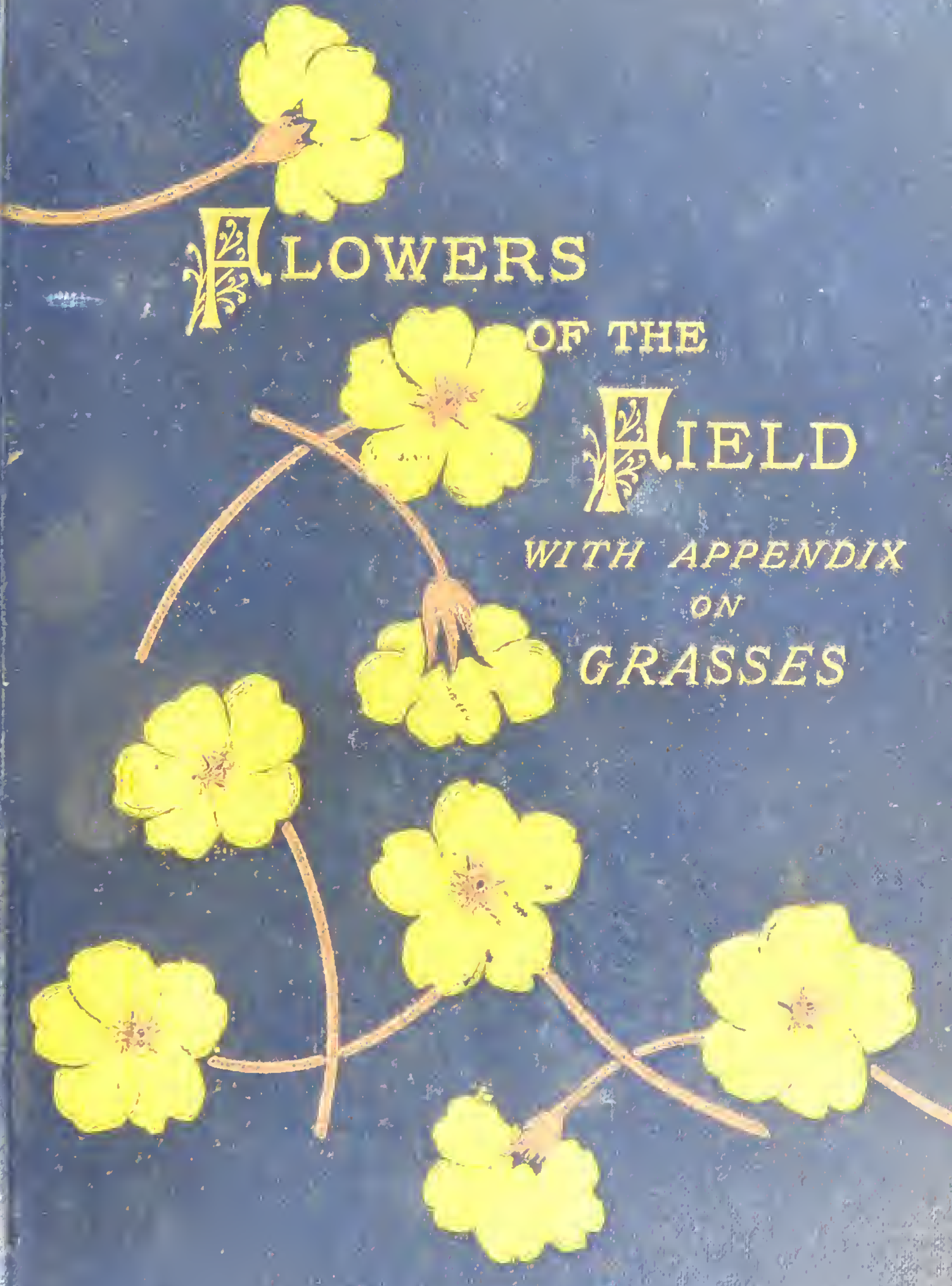

FLOWERS OF THE FIELD

WITH APPENDIX
ON
GRASSES

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FLOWERS OF THE FIELD.

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BY THE LATE

REV. C. A. JOHNS, B.A., F.L.S.,

AUTHOR OF "BRITISH BIRDS IN THEIR HAUNTS,"
"THE FOREST TREES OF GREAT BRITAIN," ETC.

Twenty-eighth Edition,

Enriched by Comparative List of Plant Names and Synopsis of Natural Orders,

AND AN APPENDIX ON

GRASSES

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INTRODUCTION

TO

BRITISH BOTANY.

CHAPTER I.

EXPLANATION OF TERMS.

Though the highest claim of this volume is to introduce the lover of Nature to an acquaintance with the common British plants, the Author has given to his first Chapter the somewhat presuming title of an "*Introduction to British Botany;*" lest those into whose hands the work may fall should pass over the earlier part of it as a treatise or summary of contents so little connected with what follows, that the perusal of it may be omitted or deferred with safety. So far is this from being the case, that the reader who is unacquainted with the elements of botany will find the body of the work of little use, unless he carefully peruses the earlier pages, and makes himself thoroughly acquainted with the general plan.

The limits of a work of this kind will not allow any account of the internal structure of plants, or of the functions of their various organs. Nor, indeed, is such description necessary in a work which professes merely to teach the unscientific how to find out the names of the flowers they may happen to fall in with in the course of their country rambles. Such a knowledge of plants as this, it may be said, and said with truth, is not Botany; nevertheless, it is a step towards Botany: for there can be no doubt that scientific treatises on this subject would often be studied with pleasure, if the reader were familiar with simply the outward appearance of the examples quoted: just as we take greater interest in accounts of astronomical discoveries, if we have seen and handled a telescope, than if we had merely had one described to us, no matter with what accuracy and minuteness. The reader, then, or, inasmuch as even the elementary knowledge of a science can only be attained by study, the *student* who wishes to make this volume practically useful in enabling him to find out the names of our common wild flowers, is recommended to read with care and attention the following pages, into which the Author has introduced nothing but what is essential to the proper understanding of the body of the work, and so to the attainment of his object.

Before a novice can commence the study of any science, he must make himself acquainted with the terms employed by writers on that science; he must not be frightened if things new to him should have strange names. Unmeaning and hard to be remembered they must appear to him at first, but this will be only as long as they remain mere sounds. When he has gained a knowledge of the *things* for which they stand, they will lose their formidable appearance, and, hard as they may still be to pronounce, they will very soon become familiar to the mind, if not to the tongue. In a scientific treatise on Botany, taken in its widest sense, these terms must of necessity be very numerous. Not so, however, with a popular description of the plants growing wild in a single country of limited extent; the Author, therefore, has endeavoured to keep technical terms as much as possible out of sight, in the hope that the lover of Nature may be beguiled into forming an acquaintance with the outward appearance of the plants of his neighbourhood, and eventually be induced to study their characters, or to extend his researches beyond the limits of his own country. He has, consequently, avoided the use of Latin words wherever English ones would do as well, and has often preferred to express by several words what might have been defined by one, because that one was probably strange to the reader. With respect to the organs of plants, he has not noticed the existence of any but those with which it is necessary that the student should be familiar before he refers to the body of the work for a description of any plant which he may have found; these, with their principal peculiarities, may be described at once. They are, ROOT, STEM, LEAF, STIPULES, BRACTS, FLOWER, CALYX, COROLLA, STAMENS, PISTILS, FRUIT, SEED, RECEPTACLE, and NECTARY.

THE ROOT.—The most frequent form of the *root* is a tuft of fibres, each of which ends in a porous substance serving to absorb moisture from the soil. In many instances, however, the nourishment thus obtained, instead of being transmitted at once to that part of the plant which rises above the ground, is lodged in another organ, which, though partaking in some measure the properties of root and stem, is distinct from both. This too, with the fibres attached to it, is called a *root*, the fibres themselves being named *rootlets*. The principal forms of the root are:—

The *Creeping Root*, familiar examples of which are afforded by Couch-grass and Great Bindweed.

The *Spindle-shaped Root;* examples, Carrot and Parsnep.

A spindle-shaped root which ends abruptly, is termed *premorse* (bitten off), as in Premorse Scabious, p. 317.

The *Tuberous Root* consists of one or more roundish solid masses, having the power of producing rootlets and buds from several parts of its surface, as the Potatoe.

The *Bulbous Root* is a solid roundish mass, producing rootlets at the lower extremity, and a bud at the other; it consists either of fleshy scales, as in the White Lily, concentric circles, as in the Onion, or is of one uniform substance throughout, as in the Crocus. This last is sometimes called a *corm.*

THE STEM.—The stem is said to be *simple* when it bears leaves, or leaves and flowers only without branches; as in Grass of Parnassus, p. 82.

A *compound stem* is repeatedly and irregularly branched, as in Flax-seed, p. 110.

A stem is said to be forked when it divides into two branches of equal, or nearly equal size. The stem of Annual Knawel, p. 536, is repeatedly forked.

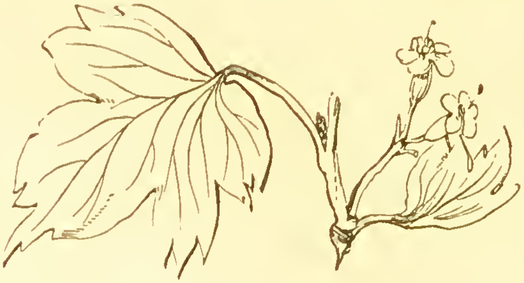
The term *erect*, when applied to the stem, has the same meaning as *perpendicular*.

An *ascending stem* is one which is horizontal when first it leaves the root, and then becomes erect. When several stems grow from one root, the central one is often *erect*, the rest *ascending*, as in the common Mallow.

A *prostrate stem* trails along the ground without ever becoming erect.

A *creeping stem* differs from the last by sending out roots from its joints. Some plants have erect stems with creeping *scions*, or shoots from the base, as the Creeping Buttercup, p. 12.

THE AXIL.—This name is given to the angle formed by a leaf where it leaves the stem. A bud or flower which springs from this angle, is termed *axillary*.



THE LEAF.—*Leaves* which spring directly from the root are called *radical;* those which grow on the stem are either *alternate*, as in Balsam, p. 130; *opposite*, as in the Pink, p. 91; or *whorled:* the leaves of Woodruff, p. 308, grow in *whorls*.

Leaves which have no stalks are termed *sessile* (sitting), as in Eryngo, p. 255.

A leaf which consists but of one piece is said to be *simple*, as in Marsh Marigold, p. 16; a *ternate leaf* consists of three *leaflets* on a common stalk, as in Medick, p. 150; a *quinate*, of five, as in Marsh Cinquefoil, p. 190. Other forms of the *compound leaf* are the pinnate, (from *penna*, a feather,) where a number of leaflets are ranged along the opposite sides of a common stalk, as in Saint-foin, p. 170.

A simple leaf is sometimes *wavy* at the edge, as in the Oak, p. 572; 3-, 5-, or 7-*lobed*, as in the Mallows, pp. 112, 113; and these *lobes* are often deeply *cut*, as in Geranium, p. 125. A leaf of five or more narrow lobes united near the main stalk, is termed *palmate*, (from *palma*, the palm of the hand,) as in Hellebore, p. 18. The *pedate* leaf differs from the palmate, in having the two side lobes divided a second time at the edge nearest the stalk. A leaf which is lobed after the manner of a pinnate leaf, is termed *pinnatifid*, (from *penna*, a feather, and *findo*, to cleave.)

If a stalk is attached to a leaf at or near its centre, such a leaf is termed *peltate*, (from *pelta*, a buckler,) as in Cotylédon, p. 234.

A leaf through which a stalk passes is termed *perfoliate*, (from *per*, through, and *folium*, a leaf,) as in Hare's-ear, p. 267.

Two leaves united by their bases, and allowing the stem to pass through them, are termed *connate*, (from *con*, together, and *nascor*, to grow,) as in Chlora, p. 418.

The margin of the leaf is either *entire*, as in Soapwort, p. 93; *crenate*, as in Marsh Pennywort, p. 253; *serrate* (saw-edged), as in Rose, p. 201; *toothed*, as in Enchanter's Nightshade, p. 214; or *fringed*, as in Rock-rose, p. 74.

With respect to form, the varieties of leaves are very numerous, and the terms employed to define them not less so. Those which occur in this volume are:—

Hair like, or *capillary*, as in Fennel, p. 271.

Linear, as in the Grasses and Pink, p. 91.

Strap-shaped, as in Corrigiola, p. 229.

Oblong, as in Rock-rose, p. 74.

Elliptical, oval, with both ends alike, as in the leaflets of Rose, p. 201.

Egg-shaped, oval, with the base broader than the extremity, as in Pear, p. 202.

Inversely egg-shaped, oval, with the base narrower than the extremity, as in Brookweed, p. 471.

Rounded, as in Pyrola, p. 403.

Heart-shaped, as in Violet, p. 77.

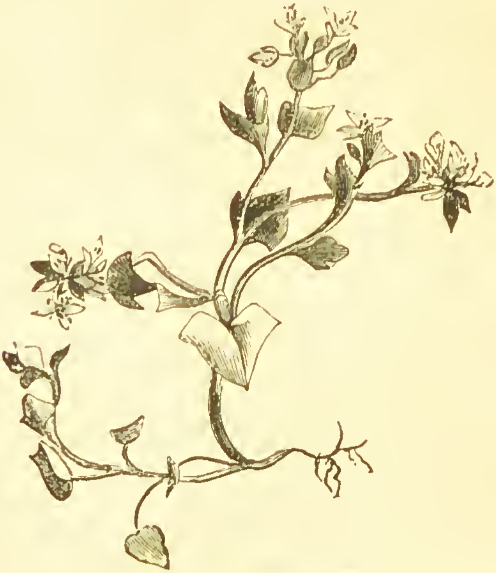
Inversely heart-shaped, as in the leaflets of Medick, p. 150.

Kidney-shaped, as in Ground Ivy, p. 497.

Arrow-shaped, as in Tower Mustard, p. 60.

Halbert-shaped, arrow-shaped, but with the barbs turned outwards.

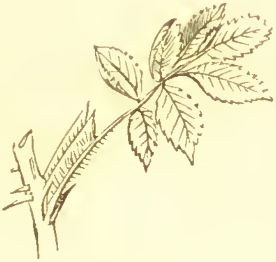
Angular, as in Danish Scurvy-Grass.



DANISH SCURVY GRASS.

Sword-shaped, as in Iris, p. 596.

STIPULES.—The base of the leaf-stalk is not unfrequently furnished with two sheathing wings; these are called stipules. The leaf of the Rose has oblong stipules at its base.



BRACTS.—Beneath the flower are frequently situated small leaves called *bracts.* Sometimes they are mere scales, as in the Broom-rape, p. 451; but more frequently they are only to be distinguished from true leaves by their smaller size, as in Evening Primrose, p. 213.

In the umbelliferous Tribe, p. 246, they often grow, several in a whorl, at the base of the general and partial umbels; and in Compound Flowers, p. 319, they are yet more numerous at the base of the heads of flowers. When they grow in this form, they are termed an *involucre,* (from *involvo,* to wrap up, because they enclose the flowers before expansion.)

THE FLOWER.—This, as it is the most ornamental, so it is the most important part of the plant, being rarely produced until the juices fit for its nourishment have been selected by the roots and matured by the leaves, and containing all the apparatus necessary for perfecting seeds. In flowering plants, besides the parts which are indispensable to the ripening of seeds, there are others which evidently serve as a protection, and others, again, the use of which is not known. The flower, however, generally, being essential to the continuance of the species, has been selected, as the part on which to found every arrangement of plants which can lay claim to accuracy or utility. A thorough knowledge of its structure is therefore necessary before the student can proceed to discover the names of the commonest plants which are flung with so bountiful a hand over our hills and fields.

THE CALYX.—This name is given to that part of the flower which in the bud stage is outside all the rest, and which when the flower is expanded encircles the more delicate parts. It is usually green, and consists of several leaves, termed *sepals;* but these sepals are often united at the base and form a cup, (hence the name *calyx*, a cup).

It is unnecessary here to describe the various forms of the calyx, which are very numerous. It may be remarked, however, that when the calyx is divided into two distinct lobes, one of which overhangs the other, it is termed *gaping;* in the Mallow tribe, p. 110, it is *double;* and in Compound Flowers, p. 319, the Valerian, p. 311, and Teazel Tribes, p. 314, it is at first a mere ring, but afterwards becomes a chaffy or feathery appendage to the seed, termed a *pappus.*

THE COROLLA.—Within the calyx is the *corolla* (little crown), a ring of delicate leaves called *petals,* usually coloured—that is, not green—and often fragrant. The petals are either distinct, as in the Rose, in which the

expanded part is termed the *limb*, the lower the *claw*; or united below, when the expanded part is termed the *border*, the lower the *tube*. The corolla more frequently

has as many petals or divisions as there are sepals; and if these are all of the same size and shape, the corolla is said to be *regular*.

The most common forms of the regular corolla of one petal, are :—

Salver-shaped, as in Primrose, p. 512.

Funnel-shaped, as in Cowslip, p. 514.

Wheel-shaped, when the tube is no longer in proportion than the axle of a wheel, as in Speedwell, p. 471.

Bell-shaped, as in Campanula, p. 384.

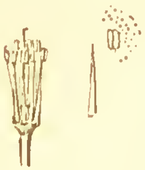
Trumpet-shaped, as in Convolvulus, p. 425.

When the irregular corolla of one petal is divided into two lobes, one of which overhangs the other, it is termed *labiate*, or *lipped*, as in the Natural Family *Labiatæ*, p. 474; if the lips are open, it is said to be *gaping*, as in Yellow Dead Nettle, p. 490; if closed, *personate*, (from *persóna*, a mask,) as in Toadflax, p. 459. In the Compound Flowers, p. 319, there are frequently two kinds of florets in one flower; those of the *disk*, or centre, being tubular, without an evident border: those of the *ray*, or margin, strap-shaped, as in the Daisy.

Among *regular* flowers of many petals, the only form which it will be necessary to mention here is the *cruciform*, consisting of four petals placed cross-wise, as in the Cruciferous Tribe, p. 36.

The most remarkable among the *irregular*, is the papilionaceous, (from *papílio*, a butterfly,) consisting of five petals, of which the upper one, called the *standard*, is usually the largest; the two side ones are termed *wings*, and the two lower ones, which are often combined, form the *keel*, p. 139.

Both calyx and corolla are not always found in the same flower, and when one only is present, it is sometimes difficult to decide by what name it should be called. In this case the term *perianth* (from the Greek *peri*, around, and *anthos*, a flower) is a convenient one. Some flowers have neither calyx nor corolla, as Water Star-wort, p. 558. When the *perianth* is said to be double, it is to be understood that calyx and corolla are both present.

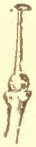


The Stamens.—Within the perianth, and frequently attached to it, is a row of delicate organs called *stamens*, of which the lower part is termed the *filament*, the upper the *anther*. When the filament is slender throughout, it is said to be *thread-like;* but if it be thick at the base, and taper to a point, it is said to be *awl-shaped*. The anther varies in shape, but is most frequently oblong, and composed of two lobes and as many cells, which are filled with a fine dust, called *pollen*. If there be no filament, the anther is said to be *sessile*. In a majority of flowers the number of stamens equals that of the petals; a few plants have but one stamen: very often the number of stamens is some multiple of the petals, that is, there are twice or thrice, &c. as many, and not a few flowers have from twenty to several hundred. Sometimes the filaments are united at the base into one or more sets, as in Hypericum, p. 117;

sometimes they form a hollow tube, the anthers being distinct, or *free*, as in Mallow, p. 111; and sometimes the filaments are free, and the anthers are united into a ring, as in the Compound Flowers, p. 319; and Heath, p. 392.

THE PISTIL.—This is the central part of the flower, and in its commonest form is a delicate column composed of three parts, the *ovary*, the *style*, and the *stigma*.

The *ovary*, (from *ovum*, an egg,) sometimes called the *germen*, contains the rudiments of the future seed.



The *style*, (from *stylos*, a column,) is to the pistil what the shaft is to a pillar, connecting the ovary with

The *stigma*, which is sometimes a mere viscid point, but more frequently an enlargement of the summit of the style, and is variously shaped, being globular, flat, lobed, &c. If there be no style, the stigma is said to be sessile.

In the majority of flowers there is but one pistil; but very often there is a single ovary, which bears several styles and stigmas. In this case the ovary usually consists of several cells, each of which, with its style and stigma, is termed a *carpel;* and the same name is given to each of the ovaries in such flowers as Marsh Marigold, p. 16, where they are distinct; and in Blackberry, p. 193, where they are united.

Both calyx and corolla, it has been said above, may be absent. Not so with respect to stamens and pistils; for, unless they are present, no seed can be perfected. It is not, however, essential that they should both be found in the same flower. Sometimes on the same plant flowers are to be found, some of which bear stamens only, others pistils only; and not unfrequently these organs grow, not only in separate flowers, but on different plants. In either case, those flowers alone which contain pistils produce seeds, and are therefore termed *fertile;* while those containing stamens only, are called *barren.* The external structure of barren and fertile flowers is often very dissimilar, as in Willow, p. 566; and Oak, p. 572. When the ovary is inserted above the base of the perianth, it is said to be *superior*, as in Crowfoot, p. 8; when below, *inferior*, as in Rose, p. 199. In like manner the perianth is said to be superior or inferior, according as it is inserted above or below the ovary.

THE FRUIT.—As the flower withers, the ovary enlarges and becomes the *fruit*, that is, the seed, with its case or covering, also called a *pericarp*, (from *peri*, around, and *carpos*, fruit). Among the various forms of fruit, the principal are—

The *capsule*, (from *cápsula*, a little box,) a dry case, either opening by *valves*, as in Pink, p. 91; by *teeth*, as in Lychnis, p. 95; by *pores*, as in Poppy, p. 28; or by splitting all round, as in Pimpernel, p. 516.

The *silique* and *silicle*, described at p. 36.

The *pod*, or *legume*, a long seed-vessel, differing from the silique in having no partition, and bearing the seeds in a single row, as in the Pea and Bean Tribe, p. 139.

The *berry*, a juicy or mealy fruit, bearing the seeds immersed in pulp, as in Elder, Currant, &c.

The *nut*, a dry fruit, composed of a hard shell, containing a seed, as in Hazel, p. 573; and Gromwell, p. 432.

The *drupe*, a nut enclosed in pulp, as the Plum and Cherry.

The *cone*, a collection of *imbricated* or overlapping scales, each of which covers two seeds, p. 575.

THE SEED.—A seed is said to be *dicotylédonous*, when it is composed of two lobes, or *cotylédons*, which enclose the *plumule*, or embryo of the future plant As the *seed* germinates, the cotylédons either rise above the ground, as in Mustard, or remain buried, as in the garden Pea. Plants bearing seeds of this structure

compose the first Natural Class, DICOTYLÉDONOUS PLANTS or EXOGENS, p. 1. When the seed is not separable into two parts, it is termed *monocotylédonous;* and plants bearing such seeds compose the Second Natural Class, MONOCOTYLÉDONOUS PLANTS, or ENDOGENS, p. 578.

RECEPTACLE.—This name is given to that part of the flower on which all the others rest. It is most conspicuous in the Compound Flowers, p. 319, where it is sometimes *conical*, as in Daisy, p. 375; *chaffy*, as in Cat's-ear, p. 334; *bristly*, as in Thistle, p. 348; or *dotted* as in Dandelion, p. 342.

NECTARY.—Any distinct organ in a flower which contains honey; for instance, the scale at the base of the petals in Crowfoot, p. 8; the spurs of the Columbine, p. 19, &c.

INFLORESCENCE.—This term is used to denote the arrangement of flowers on the stem.

A flower-stalk springing directly from the root, and bearing no leaves, is termed a *scape*, as in Primrose, p. 513.

When it is inserted in the angle between the main stem and a leaf, it is termed *axillary*, as in Balsam, p. 130.

When it is at the extremity of the main stem, having no leaves beyond it, it is said to be *terminal*, as in Grass of Parnassus, p. 82.

A flower-stalk which bears but one flower, is said to be *simple*, as in Grass of Parnassus, p. 82.

A stalk bearing a number of sessile flowers, arranged one above another, is termed a *spike*, as in Plantain, p. 526.

When, instead of being sessile, the flowers are supported on simple stalks, the inflorescence is a *cluster*, as in Melilot, p. 151.

A *panicle* differs from a cluster in being branched, as in Spurrey, p. 231.

A *corymb* differs from a cluster in bearing the lower flowers on long stalks, while the upper are sessile, or nearly so, as in Stock, p. 67.

In a *cyme* the stalks are irregularly branched, but the flowers are nearly level, as in Elder, p. 297.

The *umbel* is a mode of inflorescence in which the flower-stalks spring from a common centre, and bear each a single flower, as in Ivy, p. 287. When the stalks bear, instead of a single flower, a second umbel, the inflorescence is a *compound umbel*, the primary division being termed a *general umbel*, the secondary a *partial*. This mode of inflorescence is common in the Umbelliferous Tribe, p. 246.

A *head* resembles a simple umbel, except that the flowers are all sessile, as in Scabious, p. 318.

A *catkin* resembles a spike, except that the flowers are enclosed each within a scale-like bract, as in Hazel p. 573.

Other terms which are employed in the body of the work will be explained as they occur, or in the description which precedes the summary of each Natural Order. A glossary will also be found at the end of the volume, containing definitions of most of the common terms in use.

CHAPTER II.

SYSTEMATIC BOTANY.

It has been already stated that the only parts of a plant which are necessary to the production of seed are the *stamens* and *pistils*. On these organs, therefore, the learned Linnæus fixed, when framing his artificial arrangement of plants, as affording the readiest means of referring to the written characters of plants described in his works.[1] He nowhere claims the honour of having discovered their importance; on the contrary, he expressly alludes to a popular opinion that the fact was known to Thomas Millington, a naturalist of the preceding century. But whoever discovered the fact, it lay idle and unnoticed until Linnæus invented and perfected the system founded on the fact. This can be proved, both by the jealousy with which it was received by the naturalists of the day, whose favourite methods have disappeared before it, as well as by the acrimony with which the name and works of Linnæus are assailed by some modern botanists—men who, while they disparage the works of their great leader, find it impossible to quit the track that he has trodden out for them, from a conviction that truth lies in the path that he has prescribed, and nowhere else.

The first division of Vegetables, according to the system of Linnæus, is into Twenty-four Classes, depending on the number, position, and relative proportion of the *Stamens.*

The first eleven Classes are characterised solely by the number of the stamens, and are thus named :—

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(1) The number of species known to Linnæus, in 1753, when he published his "Species Plantarum," amounted only to 7,300.

Class I. Monandria, one stamen.
II. Diandria, two stamens.
III. Triandria, three ditto.
IV. Tetrandria, four ditto.
V. Pentandria, five ditto.
VI. Hexandria, six ditto.
VII. Heptandria, seven ditto.
VIII. Octandria, eight ditto.
IX. Enneandria, nine ditto.
X. Decandria, ten ditto.
XI. Dodecandria, twelve to nineteen ditto.

The Twelfth and Thirteenth Classes are distinguished by the situation as well as number of the stamens.

Class XII. Icosandria, twenty stamens, or more, inserted on the calyx.
XIII. Polyandria, twenty stamens, or more, inserted on the receptacle.

The Fourteenth and Fifteenth Classes, by the number and relative proportion of the stamens.

Class XIV. Didynamia, four stamens, two longer than the others.
XV. Tetradynamia, six stamens, four long, and two short.

The Classes from the Sixteenth to the Nineteenth are distinguished by the combination of the stamens with each other, no account being taken of their number.

Class XVI. Monadelphia, stamens all united by their filaments.
XVII. Diadelphia, stamens combined by their filaments into two sets.
XVIII. Polyadelphia, stamens combined by their filaments into three or more sets.
XIX. Syngenesia, stamens united by their anthers; flowers compound.

In *Class* XX. Gynandria, the stamens are inserted on the pistil, and so combined with it as to form a central *column*.

The Twenty-first, Twenty-second, and Twenty-third

Classes are distinguished by the stamens and pistils being in separate flowers.

Class XXI. Monœcia, stamens and pistils in different flowers, but on the same plant.
XXII. Diœcia, stamens and pistils in different flowers and on separate plants.
XXIII. Polygamia, flowers of three kinds; some having stamens only, some pistils only, and some both stamens and pistils.
XXIV. Cryptogamia, flowerless plants, or those in which stamens and pistils have not been detected, fructification being performed by other organs.

Each of the Classes is subdivided into two or more Orders. The Orders of the first Thirteen Classes depend on the number of the *Pistils*. Thus, any plant in either of the Classes from Monandria to Polyandria must be placed in one or other of the following Orders :—

Order	Monogynia,	one pistil.
	Digynia,	two pistils.
	Trigynia,	three ditto
	Tetragynia,	four ditto.
	Pentagynia,	five ditto.
	Hexagynia,	six ditto.
	Heptagynia,	seven ditto.
	Decagynia,	ten ditto.
	Dodecagynia,	twelve ditto.
	Polygynia,	many ditto.

In the Fourteenth Class, Didynamia, there are two Orders.

Order I. Gymnospermia, ovaries four, one-seeded.
II. Angiospermia, ovary single, many-seeded.

In the Fifteenth Class, Tetradynamia, there are two Orders.

Order I. Siliculosa, fruit a *silicle*, or short pod without a partition.
II. Siliquosa, fruit a *silique*, or long pod without a partition,

The Orders of the Sixteenth, Seventeenth, and Eighteenth Classes, Monadelphia, Diadelphia, and Polyadelphia, depend on the *number* of the *stamens:* thus, *Class* Monadelphia, *Order* Pentandria, includes plants having *five* stamens united by their filaments into one set; *Class* Diadelphia, *Order* Decandria, plants having *ten* stamens combined by their filaments into *two* sets; and *Class* Polyadelphia, *Order* Polyandria, plants with more than *twenty* stamens combined by their filaments into *three* or *more* sets.

In the Nineteenth Class, Syngenesia, the Orders depend on the structure and arrangement of the *florets;* but as they are Orders nearly identical with the *Groups* into which the Compound Flowers are distributed, their limits need not be assigned here.

In the Twentieth, Twenty-first, and Twenty-second Classes, Gynandria, Monœcia, and Diœcia, the Orders are determined by the *number* of the stamens. Plants, for example, having *one* stamen are in the *Order* Monandria: those with *two* stamens, in the *Order* Diandria, &c.

The Twenty-third Class, Polygamia, contains only one British *Order*, namely, Monœcia, in which there are three different kinds of flowers—those with stamens only, those with pistils only, and those with both stamens and pistils *on the same plant.*

As the limits of this volume exclude all mention of the plants in the extensive *Class* Cryptogamia, it is not necessary to enumerate the *Orders* into which it is divided.[1]

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(1). The student is recommended to commit to memory the names, rather than the numbers of the Classes and Orders. While he does this he will find it useful to bear in mind that the names both of Classes and Orders are of Greek etymology, and that the prefixes are mostly numerals. Thus, *mon* signifies one; *di*, two; *tri*, three; *tetra*, four; *pent*, five; *hex*, six; *hepta*, seven; *oct*, eight; *enne*, nine; *dec*, ten; *dodec*, twelve; *icos*, twenty; and *poly*, many. The root *dynam* signifies power or excess: thus, *Didynamia* means "the excess of two;" *Tetradynamia*, "the excess of four." *Adelphia* signifies a brotherhood, as *Monadelphia*, "one brotherhood," or united set of stamens; *Syngenesia* signifies "a growing together," in allusion to the combination of the anthers in that class. The termination *œci* denotes "a house-

This arrangement brings together, for no other purpose than for convenience of reference, plants dissimilar in structure, habit, and properties. It is, therefore, an Artificial System; as such Linnæus proposed it, and such he always professed it to be. "I have never pretended that the method was natural," he says, in his letter to Haller. "A Natural System," he repeatedly remarks, in his other writings, "is the first and last object to be aimed at by botanists.[1] . . . A perfect System of this kind should assemble plants allied in habit, mode of growth, properties, and uses." Of such a system he left a slight sketch; but the rich store of plants which has been laid open to modern botanists never came within his reach; it is, therefore, not surprising that, being well aware of his defective materials, he never attempted to fill the sketch in. Make it as complete as he would, in a few years it would have been imperfect and useless. Not so, however, his Artificial System, which, still marked by the limits that he assigned, not only offers facilities for forming an acquaintance with the names of plants, but affords ready means of reference to any System in which plants are arranged according to their natural characters. It is not, therefore, too much to say that the Artificial System of Linnæus has served a double purpose. Before a Natural Method was arranged, it was the only one that was available; and now that it is

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hold;" so in the Class *Monœcia*, the stamens and pistils may be supposed to occupy separate apartments in one house. *Polygamia* signifies "many kinds of fructification:" *Cryptogamia*, "concealed fructification." *Andria* denotes stamens; *gynia*, pistils: thus *Triandria* includes flowers with *three stamens*; *Digynia*, flowers with *two pistils*; and *Gynandria*, flowers with *pistils and stamens united*. In the two Orders of the Class *Didynamia*, the term *Gymnospermia* denotes "naked seed;" the fruit being apparently destitute of a covering. *Angiospermia* implies that the seeds are enclosed in a "seed-vessel." The terms *Siliculosa* and *Siliquosa* are explained in the text.

(1) Methodi Naturalis fragmenta inquirenda sunt. Primum et ultimum hoc in Botanicis desideratum est. Plantæ omnes utrinque affinitatem monstrant uti territorium in mappâ geographicâ.—*Lin. Phil. Bot.* Aph. 77.

Methodus Naturalis est ultimus finis Botanicis.—*Ibid.* Aph. 163.

Naturalis Character ab omni Botanico teneatur oportet.—*Ibid.* Aph. 192.

Classes, quo magis naturales, eo, cæteris paribus, præstantiores sunt. Adfines conveniunt habitu, nascendi modo, proprietatibus, viribus, usu. Summorum Botanicorum hodiernus labor in his sudat, et desudare decet; methodus Naturalis hinc ultimus finis Botanicis est et erit.—*Ibid.* Aph. 206.

superseded, it is still eminently useful as an index, or a catalogue of the contents of its successor; the secondary use being one which, perhaps, Linnæus himself scarcely contemplated.

It is not necessary here to give an account of the various Natural Systems which have been proposed. Suffice it to say, the one generally adopted in Britain is a modification of those of Jussieu and De Candolle. Here the whole Vegetable Kingdom is divided into three great CLASSES.

CLASS I. DICOTYLEDONES.

In this Class are placed such plants as produce seeds divisible into two lobes or *cotyledons* (p. 1). It is subdivided into Four *Sub-classes*, THALAMIFLORÆ, CALYCIFLORÆ, COROLLIFLORÆ, and MONOCHLAMYDEÆ.

Sub-class I. THALAMIFLORÆ.

Flowers furnished with calyx and corolla; *petals* distinct, inserted into the receptacle, or *thalamus*; *stamens* springing from the base of the *ovary*.—This Sub-class contains Twenty-two British Orders. (Pp. 2—133.)

Sub-class II. CALYCIFLORÆ.

Flowers furnished with calyx and corolla; *sepals* distinct, or united; *petals* distinct; *stamens* inserted in the *calyx*, or close to its base.—This Sub-class contains Eighteen British Orders, numbered from XXIII. to XL. (Pp. 133—292.)

Sub-class III. COROLLIFLORÆ.

Flowers furnished with calyx and corolla; *petals* united, bearing the stamens.—In this Sub-class there are Twenty-seven British Orders, numbered from XLI. to LXVII. (Pp. 292—528.)

Sub-class IV. MONOCHLAMYDEÆ.(1)

Perianth single, or none. This Sub-class contains Twelve British Orders, numbered from LXVIII. to LXXXI. (Pp. 528—577.)

CLASS II. MONOCOTYLEDONES.

Seeds with a single *cotyledon* (p. 578). It is sul divided into Two *Sub-classes*, PETALOIDEÆ and GL MACEÆ.

Sub-class I. PETALOIDEÆ.

Flowers with petals.—This Sub-class contains Seventeen British orders, numbered from LXXXII. to XCVIII. (P. 578 to the end.)

Sub-class II. GLUMACEÆ.

Flowers formed of chaffy scales, or *glumes.*—This Sub-class contains the Grasses and Sedges.

CLASS III. ACOTYLEDONES.

Flowerless plants. Here are placed the Ferns, Mosses, Liverworts, Lichens, Sea-weeds, and Fungi.

Each of the *Natural Orders*, or *Tribes*, alluded to above, consists of a number of plants which are more or less like one another in various respects, especially in the organs of fructification. The plants comprised in each Tribe are again distributed into *genera*, or *families*, each genus including all plants which resemble one another yet more closely in the essential characters of fructification. A *species*, or *kind*, is an assemblage of individual plants agreeing with each other in *all* essential points; and individuals which differ one from another in minor points, such as an irregular formation of leaves or mode of growth, unusual colour of flowers, extraordinary number of petals, &c., are termed *varieties*. These words are frequently used loosely in common conversation, but the habit cannot be too carefully avoided in botanical descriptions, as calculated to produce great confusion. Throughout these pages they will be employed exclusively with the meanings above assigned, which will be rendered clearer by the following examples :—The wild sweet-scented Violet is called by botanists *Víola odoráta :* the former name, *Víola*, indicating that it belongs to the *genus* so called, and being, therefore, termed its *generic* name. Besides the scented Violet, we have in England the Dog-Violet, the Marsh-Violet, the Pansy, and several others, all belonging to the same *genus*, and, therefore, described under the name *Víola*. But the Dog-Violet differs from the Sweet-scented, in having acute sepals, and leafy stems, whereas the latter has blunt sepals, and the leaves spring directly from the roots. The Dog-Violet is, therefore, a distinct *species*, *Víola canína*. The Marsh-Violet and Pansy differ also in important characters; they are, therefore, also considered distinct species, the fact being indicated by the addition of the *specific* or *trivial*[1] names, *palustris* and *trícolor*, to the *generic* name *Víola*. The flowers of the scented *Violet* are sometimes white and sometimes blue ; garden specimens are often tinged with pink, and still more frequently, double. These characters being either unimportant, or inconstant —for blue flowers generally have a great tendency to sport to white, and double flowers are not perpetuated by seed—the blue, white, pink, and double sweet Violets are not considered distinct species, but mere

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(1) From the Greek *monos*, one, and *chlamys*, a mantle or covering; the plants of this Sub-class never having both calyx and corolla.

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(1) No little merit is due to Linnæus for inventing the specific or trivial name of plants. The method in use previous to his time was to attach to every plant some such title as the following: *Gramen Xerampelinum, Miliacea, prætenuis ramosaque sparsa panicula, sive, Xerampelino congener, arvense, æstivum ; gramen minutissimo semine.* The name of this grass Linnæus expressed with accuracy and simplicity by the two words, *Poa bulbosa.*

varieties. Now there are many plants which bear a close resemblance to a Violet in the structure of their flowers and seeds, but yet differ so far that they cannot be reduced under the same *genus;* they are therefore placed with it in the same *Tribe,* called VIOLACEÆ, all the genera in which differ in essential points from the genera which compose other Tribes, but agree with a vast number in having *two-lobed seeds* and *leaves with netted veins,* two of the characters of DICOTYLEDONOUS PLANTS. In this Class it is arranged with plants furnished with both calyx and corolla, and having their petals distinct and inserted with the stamens into the receptacle.

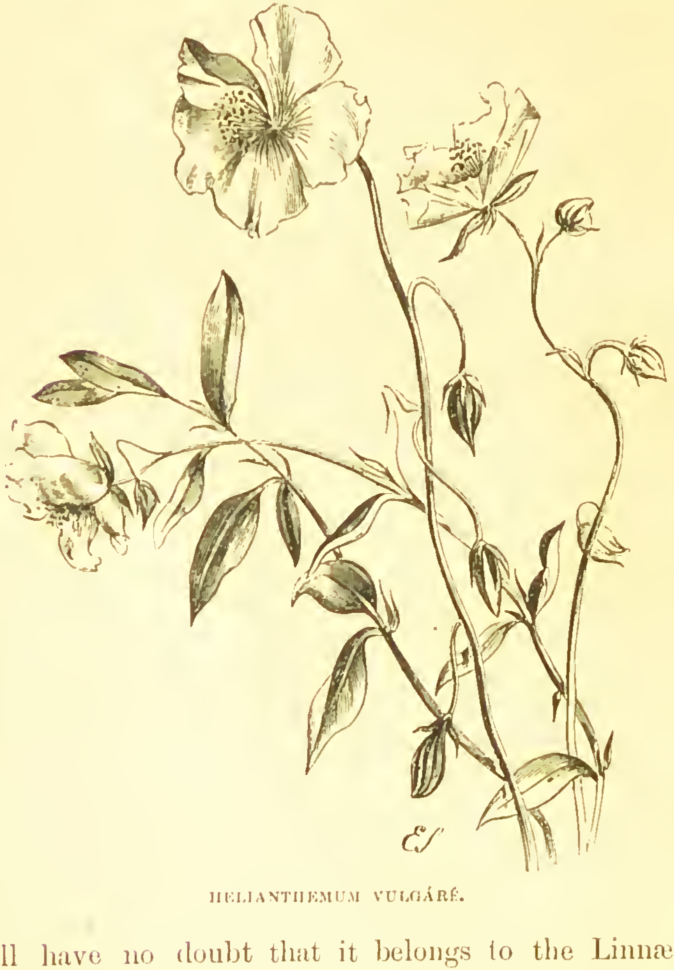
The plant of which we have been speaking belongs, then, to the—

CLASS I. DICOTYLÉDONES.
SUB-CLASS I. THÁLAMIFLORÆ.
Order or *Tribe* IX. VIOLACEÆ.
Genus 1, Viola.
Species 2, odoráta.
Variety, blue, white, or *double.*

In the Linnæan system the same plant is placed in the *Class* PENTANDRIA, which comprises flowers having *five stamens;* and in the *Order* MONOGYNIA, which includes such of them as have *one pistil.*

In this work the British genera and species are arranged in their Natural Orders or Tribes; and a synopsis is also given of the genera only, as they stand in the Linnæan Classes and Orders. (P. xxviii. &c.)

The student, it is presumed, wishes to determine the genus and species, or to find the name, of the plants which he meets with in his walks. Suppose him to have found a small shrubby plant with oblong leaves and large yellow flowers: in what part of this work must he look for a description which he may compare with the specimen in his hand? On examining a flower (he will do well to select one which is just expanded), he will discover a large number of *stamens*, evidently more than twenty, inserted in the receptacle, and he will have no doubt that it belongs to the Linnæan *Class* POLYANDRIA. In the centre of the stamens he will detect a single *pistil*, and hence will conclude that it should be referred to the *Order* MONOGYNIA in that Class. He will, accordingly, turn to *Class* POLY-



HELIANTHEMUM VULGÁRÉ.

ANDRIA, *Order* MONOGYNIA (p. xlvii), and will proceed to read the characters of the genera there described, comparing such descriptions with his specimen. Opposite the first genus, *Delphínium*, he will find the characters, "*Sepals* 5, coloured, the upper one spurred." This is no description of his plant, so he passes on to 2. *Papáver*: "*Sepals* 2," &c. He reads no further, but passes on to 6. *Actæa*: "*Sepals* 4." Neither will this do, for his plant has 5 *sepals*, of which the two outer are much smaller than the rest. The next, genus 7. *Heliánthemum*, has "*Sepals* 5, the two outer smallest, or sometimes wanting; *petals* 5." To this genus, then, his plant belongs;—the short description which follows also suits his plant: "Small shrubs with oblong leaves, and showy, white or yellow flowers." He is then referred to the ROCK-ROSE TRIBE (p. 74), where are enumerated the leading characters of the Tribe and of all the British genera included in it. Being assured, by a perusal of these, that his plant belongs to the *genus Heliánthemum*, he proceeds to ascertain its *species*, and finally satisfies himself that he holds in his hand a specimen of a plant known among botanists by the name of *Heliánthemum vulgáré* (Common Rock-Rose).

To take another example. The plant of which it is desired to discover the name is an erect, herbaceous plant, with smooth leaves and long spiked clusters of green flowers. The number of stamens here is variable, so that there is some doubt whether it should be referred to the *Class* DODECANDRIA, including plants with from 12 to 20 stamens, or to the *Class* POLYANDRIA, with more than 20. About the number of *pistils*, however, there can be no doubt—they are distinctly 3. Accordingly, if we turn to *Class* DODECANDRIA, *Order* TRIGYNIA (p. xlvii.), we find only the genus "*Reséda*. Herbaceous or somewhat shrubby plants with furrowed stems, smooth leaves, and terminal spikes or clusters of greenish flowers." This description is accompanied by a reference to the ROCKET-TRIBE (p. 72). If, on the other hand, we refer to the *Class* Polyandria, we find the *Order* Pentagynia, including plants with from 2 to 6 pistils. Here, mention of *Reséda* occurs again, and other characters are given, equally descriptive of the plant in question, namely: "*Flowers* irregular; *capsule*

RESÉDA LUTÉOLA.

solitary, open at the top." We are again referred to the Rocket Tribe (p. 72), where we find a fuller description of the tribe and genus, followed by such a description of the only two British species as assures us that our plant is *R. Lutéola* or Dyer's Rocket.

One more example will suffice. The plant to be examined is a small herb with somewhat fleshy leaves and white flowers, with 6 stamens, four long and two short. Had they been all of equal length we should have had no hesitation in referring the plant to the *Class* HEXANDRIA; but as this is not the case, we turn to the *Class* TETRADYNAMIA (p. xlix). Here we find that "all the plants in this class belong to the CRUCIFEROUS TRIBE, p. 36." On turning to the reference, we learn that the division of this TRIBE corresponds with that of the *Linnæan Class,*—namely, into plants bearing *silicles* and those bearing *siliques.* The plant in question bears a *silicle*, or *pouch*, and must be searched for in the group "† *Pouch 2-valved, with a central vertical partition.*" *Thlaspi* and *Capsella* are passed over, as having *flat* pouches; *Hutchinsia* and *Teesdalia* have a *keeled* pouch, the cells of which are 2-seeded; in *Lepídium* the valves of the pouch are keeled, and the cells 1-seeded; but in *Cochlearia* the pouch is globose, or nearly so, the valves are not flattened, and the seeds are numerous. Our plant, then, is a *Cochlearia;* and on turning to genus 6 (p. 46), we find that our specimen, which has an egg-shaped pouch and triangular leaves, is *C. Dánica* (Danish Scurvy-Grass).

LINNÆAN ARRANGEMENT.

CLASS I. MONANDRIA. 1 *Stamen.*

ORDER I. MONOGYNIA. 1 *Pistil.*

1. SALICORNIA. *Calyx* fleshy ; *petals* 0 ; *stigma* 2-3 cleft.—Sea-side plants with jointed stems, inconspicuous flowers, and no true leaves. GOOSE-FOOT TRIBE. P. 528.

2. HIPPÚRIS. *Calyx* minute ; *petals* 0 ; *stigma* undivided.—Aquatic plants with whorled leaves, and inconspicuous axillary flowers. MARE'S-TAIL TRIBE. P. 215.

3. ZOSTÉRA. *Calyx* 0 ; *petals* 0 ; *stamens* and *pistils* arranged alternately in 2 rows.—Marine plants, with long grass-like submersed leaves. POND-WEED TRIBE. P. 644.

4. CENTRANTHUS. *Calyx* bearing a feathery appendage to the pericarp ; *corolla* of 1 *petal* spurred at the base. —Herbaceous plants with opposite leaves and small flowers. VALERIAN TRIBE. P. 309.

5. ALCHEMILLA. *Calyx* 8-cleft, bearing the *stamens*, which vary in number from 1 to 4 : *petals* 0.—Herbaceous plants with stipuled leaves and small green flowers, ROSE TRIBE. P. 171.

ORDER II. DIGYNIA. 2 *Pistils.*

6. CALLÍTRICHÉ. Small aquatic plants with opposite leaves, inconspicuous axillary flowers without petals, and 4-seeded fruit. WATER-STARWORT TRIBE. P. 558.

CLASS II. DIANDRIA. 2 *Stamens.*

ORDER I. MONOGYNIA. 1 *Pistil.*

1. LIGUSTRUM. *Corolla* 4-cleft, regular ; *fruit* a berry.—A shrub with smooth leaves, and white panicled flowers. OLIVE TRIBE. P. 407.

2. VERÓNICA. *Corolla* unequally 4-cleft ; *fruit* a 2-celled capsule.—Herbaceous plants with opposite leaves and blue or flesh-coloured flowers. FIG-WORT TRIBE. P. 453.

3. PINGUÍCULA.
4. UTRICULARIA.
Corolla 2-lipped and spurred ; *fruit* a 1-celled capsule.—Aquatic or bog plants with delicate yellow, pink, or purple flowers. BUTTERWORT TRIBE. P. 506.

5. LÝCOPUS.
6. SÁLVIA.
Corolla gaping ; *fruit* 4-lobed and 4-seeded. — Herbaceous plants with square stems and opposite leaves. LABIATE TRIBE. P. 474.

7. CIRCÆA. *Sepals* 2 ; *petals* 2.—Herbaceous plants with opposite leaves, and small pinkish white flowers. WILLOW-HERB TRIBE. P. 208.

8. FRÁXINUS. *Calyx* 0 ; *corolla* 0 ; *fruit* winged, 1-seeded.—A lofty tree. OLIVE TRIBE. P. 407.

9. LEMNA. Minute, stemless, aquatic, floating plants consisting entirely of a few simple roots and small leaves, embedded in which last, flowers are produced, but rarely. DUCK-WEED TRIBE. P. 643.

CLASS III. TRIANDRIA. 3 *Stamens.*

ORDER I. MONOGYNIA. 1 *Pistil.*

1. VALERIANA.
2. FÉDIA.
Calyx crowning the fruit ; *corolla* 5-cleft. — Herbaceous plants with opposite leaves and small flowers. VALERIAN TRIBE. P. 309.

3. Iris.
4. Crocus.
5. Trichonéma.

Perianth 6-cleft, superior.—Herbaceous plants with bulbous, or tuberous roots, sword-shaped, or grass-like leaves, and beautiful flowers. Iris Tribe. P. 594.

6. Juncus. *Perianth*, 6-cleft, inferior.—Mostly marsh plants with cylindrical stems and leaves, and brownish green flowers. Rush Tribe. P. 622.

* Many of the Sedge Tribe belong to this Class and Order; their inflorescence is in terminal spikes formed of chaffy scales, or *glumes*, with a flower at the base of each. Not described in this work.

Order II. DIGYNIA. 2 *Pistils.*

This Order contains only the Grass Tribe, the flowers of which consist of 2 chaffy valves or glumes arranged in small spikes (*spikelets*), each of which has a pair of glumes at the base, outside. For a description of this and the preceding tribe, see Miss Pratt's, "Grasses and Sedges."

Order III. TRIGYNIA. 3 *Pistils.*

7. Montia. *Sepals* 2; *capsule* 3-valved.—A small aquatic plant, with opposite leaves and minute white flowers. Purslane Tribe. P. 226.

8. Holósteum. *Sepals* 5; *capsule* opening with 6 teeth.—A small plant with opposite leaves and white flowers which grow in umbels. Chickweed Tribe. P. 87.

9. Polycarpon. *Sepals* 5; *capsule* 3-valved.—A small plant with white flowers, bearing its lower leaves in whorls of 4. Knot-grass Tribe. P. 228.

10. Tillæa. *Sepals* 3; *carpels* 3.—A minute plant with fleshy leaves and greenish-white flowers. Stonecrop Tribe. P. 232.

Class IV. TETRANDRIA. 4 *Stamens equal in length.*

Order I. MONOGYNIA. 1 *Pistil.*

1. Dípsacus. 2. Scabiósa. 3. Knautia.	*Corolla* of one petal; *ovary* inferior; *fruit* 1-seeded, crowned by the calyx.—Herbaceous plants with flowers in heads. Teazel Tribe. P. 314.
4. Rúbia. 5. Gálium. 6. Aspérula. 7. Sherardia.	*Corolla* of one petal; *ovary* inferior; *fruit* 2-lobed and 2-seeded. —Herbaceous plants, all the British species of which have whorled leaves and small flowers. Madder Tribe. P. 302.
8. Mentha. 9. Thymus. 10. Oríganum.	*Corolla* of one petal; *ovary* superior, 4-lobed; *fruit* 4-seeded. —Herbaceous or shrubby plants with opposite aromatic leaves, and more or less irregular flowers. Labiate Tribe. P. 474.
11. Gentiána. 12. Cicendia.	*Corolla* of one petal; *ovary* superior; *capsule* 1-celled, 2-valved, many-seeded.—Bitter herbs with opposite leaves, and blue or yellow flowers. Gentian Tribe. P. 112.

13. Plantágo. *Corolla* 4-cleft, the lobes reflexed: *stamens* very long; *capsule* 2-celled, bursting all round transversely.—Herbaceous plants with spiked flowers, which are remarkable for their very long stamens. Plantain Tribe. P. 524.

14. Centúnculus. *Stamens* short; *capsule* 1-celled, bursting all round transversely.—A minute plant with alternate leaves and inconspicuous axillary flowers. Primrose Tribe. P. 510.

15. Epimédium. *Corolla* of 4 petals with a scale at

the base of each within.—A mountainous plant remarkable for its thrice ternate leaves. Barberry Tribe. P. 22.

16. Senebiéra.
17. Cardaminé.
Sepals 4; *petals* 4; *fruit* a *silique* or *silicle*.—Herbaceous plants belonging to a tribe which usually have six stamens, 4 long and 2 short. Cruciform Flowers. P. 36.

18. Cornus. *Calyx* of 4 minute sepals; *petals* 4; *fruit* a berry-like drupe.—A shrub with opposite leaves and cymes of white flowers. Cornel Tribe. P. 289.

19. Euónymus. *Fruit* an angular capsule opening with valves.—A shrub remarkable for its green branches and flowers, and bright rose-coloured capsules. Spindle-tree Tribe. P. 133.

20. Parietaria. *Calyx* 4-cleft; *petals* 0; *stamens* bursting with an elastic spring.—A branched herbaceous plant, with reddish stems and small clustered axillary flowers. Nettle Tribe. P. 559.

21. Alchemilla. *Calyx* 8-cleft; *petals* 0.—A small tufted plant, with deeply cut leaves and minute greenish axillary flowers. Rose Tribe. P. 171.

22. Sanguisorba. *Calyx* 4-cleft, with 4 scales at the base; *petals* 0.—A slender herbaceous plant, with oblong heads of brownish-purple flowers. Rose Tribe. P. 171.

23. Isnardia. *Calyx* deeply 4-cleft; *petals* 0.—A very rare aquatic plant, with prostrate stems and small axillary flowers. Willow-herb Tribe. P. 208.

24. Thésium. *Fruit* a *drupe* crowned by the calyx.—A parasitic plant with branched herbaceous stems, narrow leaves, and terminal clusters of whitish flowers. Sandal-wood Tribe. P. 546.

Order II. DIGYNIA. 2 *Pistils.*

25. Gentiána. *Capsule* many-seeded.—Bitter herbs

with opposite leaves and tubular flowers. Gentian Tribe. P. 412.

26. Cuscuta. *Capsule* 4-seeded.—Leafless, parasitic plants, with red, tangled stems, and wax-like flowers. Bindweed Tribe. P. 423.

Order III. TETRAGYNIA. 4 *Pistils.*

27. Sagína.
28. Mœnchia.
29. Cerastium.

Sepals 4; *petals* 4; *capsule* many seeded, opening with valves or teeth.—Minute plants with opposite leaves and white flowers. Chickweed Tribe. P. 87.

30. Radíola. *Sepals* 4, connected below; *petals* 4; *capsule* 8-valved, 8-celled.—A minute much branched plant, with smooth leaves and white flowers. Flax Tribe. P. 107.

31. Tillæa. *Sepals* 4; *petals* 4; *carpels* 4.—A minute plant with fleshy leaves and greenish white flowers. Stonecrop Tribe. P. 232.

32. Ilex. *Corolla* wheel-shaped; *fruit* a 4-seeded berry.—A hard-wooded tree or shrub with prickly leaves and scarlet berries. Holly Tribe. P. 405.

33. Potamogéton.
34. Ruppia.

Perianth single of 4 leaves or 0; *fruit* of 4 nuts.—Submersed aquatics with long stems, membranous or floating, leathery leaves, and inconspicuous greenish flowers. Pond-weed Tribe. P. 644.

Class V. PENTANDRIA. 5 *Stamens.*

Order I. MONOGYNIA. 1 *Pistil.*

* *Perianth double; corolla of 1 petal; ovary 4-cleft, superior.*

1. Echium. 2. Pulmonaria. 3. Lithospermum. Mertensia. 5. Sýmphytum. 6. Borágo. 7. Lycop-

sis. 8. Anchúsa. 9. Myosótis. 10. Asperúgo. 11. Cynoglossum. *Ovary* 4-lobed; *fruit* of 4 seeds.—Herbaceous plants, mostly with rough leaves and salver-shaped, funnel-shaped, wheel-shaped, or rarely irregular flowers of 1 petal. Borage Tribe. P. 427.

** *Perianth double; corolla of 1 petal; ovary undivided, superior.*

12. Prímula. 13. Hottonia. 14. Cýclamen. 15. Anagallis. 16. Lysimachia. 17. Glaux. 18. Sámolus. *Stamens* opposite the lobes of the corolla; *capsule* many-seeded.—Herbaceous plants with regular, generally showy flowers. Glaux has a coloured *calyx* and no *corolla;* in Sámolus, the *ovary* is half inferior. Primrose Tribe. P. 510.

19. Menyanthes.
20. Villarsia.
21. Erythræa.

Stamens alternate with the lobes of the corolla; *capsule* 2-valved.—Bitter herbs with showy flowers. Gentian Tribe. P. 412.

22. Solánum. 23. Átropa. *Fruit* a berry. 24. Hyoscyamus. *Capsule* enclosed in the calyx, and opening by a lid. 25. Datúra. *Capsule* 4-valved.—Herbaceous plants (except Solánum, which is somewhat shrubby) with showy flowers, and often an offensive odour, indicating dangerous narcotic properties. Nightshade Tribe. P. 442.

26. Verbascum. *Corolla* irregular; *stamens* unequal in length: Herbaceous plants with large root-leaves, and tall stems bearing numerous yellow flowers. Figwort Tribe. P. 453.

27. Convólvulus. 28. Calystégia. *Corolla* trumpet-shaped, entire; *stigmas* 2.—Mostly twining plants with large handsome flowers. Bindweed Tribe. P. 423.

29. Polemónium. *Ovary* 3-celled, 3-valved; *stigmas* 3.—An erect herbaceous plant with numerous blue or white flowers remarkable for their blue pollen. Jacob's-ladder Tribe. P. 421.

30. Azálea. *Corolla* bell-shaped; *stamens* at the base of the *corolla.*—A low shrub with wiry branches and crowded leaves. Heath Tribe. P. 392.

31. Vinca. *Corolla* salver-shaped with oblique segments.—Somewhat shrubby plants with blue flowers, and bearing their seeds in 2 erect capsules, which do not burst. Periwinkle Tribe. P. 410.

*** *Perianth double; corolla of* 1 *petal; ovary inferior.*

32. Jasíoné. *Flowers* in heads; *anthers* united at the base.—An herbaceous plant with rough leaves and heads of blue flowers surrounded, like the Compound Flowers, by an involucre. Bell-Flower Tribe. P. 382.

33. Lobelia. *Corolla* 2-lipped, split to the base on the upper side; *anthers* united.—Herbaceous plants with showy flowers, of which the lower lip is deeply lobed. Lobelia Tribe. P. 388.

34. Campánula. 35. Phyteuma.	*Corolla* bell- or wheel-shaped; *style* downy on its upper part.—Herbaceous plants, mostly with handsome blue flowers. Bell-flower Tribe. P. 382.

36. Lonicéra. *Corolla* with a long tube, gaping; *berry* crowned by the calyx.—Mostly twining shrubs with fragrant flowers, which are either axillary or grow in heads. Woodbine Tribe. P. 295.

**** *Perianth double; corolla of* 4—5 *petals; ovary superior.*

37. Rhamnus. *Stamens* opposite the petals; *fruit* a 2—4 seeded berry.—Small trees with greenish flowers and black berries. Buckthorn Tribe. P. 136.

38. Euónymus. *Stamens* alternate with the petals; *fruit* an angular capsule.—A shrub remarkable for its green branches and flowers, and bright rose-coloured capsules. Spindle-tree Tribe. P 133.

39. Impatiens. *Sepals* 2, coloured; *corolla* irregular, spurred.—Succulent herbaceous plants, remarkable for the curious structure of their flowers and elastic capsules. Balsam Tribe. P. 129.

40. Víola. *Sepals* 5; *corolla* irregular, spurred.—Herbaceous plants with blue, white, yellow, or variegated flowers, which are often fragrant. Violet Tribe. P. 76.

***** *Perianth double; corolla of 5 petals; ovary inferior.*

41. Ribes. *Calyx* 5-cleft, bearing the petals and stamens; *berry* juicy.—Shrubs with green flowers and eatable fruit. Gooseberry and Currant Tribe. P. 239.

42. Hédera. *Calyx* of 5 teeth; *petals* and *stamens* inserted on the ovary; *berry* mealy.—An evergreen climbing shrub, bearing its green flowers in simple umbels. Ivy Tribe. P. 286.

****** *Perianth single.*

43. Glaux. *Corolla* bell-shaped, 5-lobed; *capsule* with about 5 seeds.—A sea-side plant, with succulent leaves and pink axillary flowers. Primrose Tribe. P. 510.

44. Illécebrum. *Sepals* 5, awl-shaped, white; *seed* 1.—A rare aquatic, with slender tangled stems, minute leaves, and whorled flowers. Knot-grass Tribe. P. 228.

45. Thesium. *Perianth* 4—5-cleft; *fruit* a *drupe* crowned by the calyx.—A parasitic plant, with branched herbaceous stems and terminal clusters of whitish flowers. Sandal-wood Tribe. P. 546.

Order II. DIGYNIA. 2 *Pistils.*

46. Hydrocótylé, to 79. Myrrhis. *Petals* 5; *seeds* 2, crowned by the calyx.—Herbaceous plants, mostly

with hollow, jointed stems, compound leaves, and umbels of small flowers. Umbelliferous Tribe. P. 246.

80. Gentiána. *Corolla* of 1 petal; *capsule* 1-celled. 2-valved, many-seeded.—Bitter herbs with opposite leaves and tubular flowers. Gentian Tribe. P. 412.

81. Cúscuta. *Corolla* of one petal; *capsule* 4-seeded. —Leafless parasitic plants, with red tangled stems, and wax-like flowers. Bindweed Tribe. P. 423.

82. Herniaria. *Sepals* 5; *petals* or *barren stamens* 5, alternate with the stamens.—A small, somewhat shrubby plant, with prostrate stems and numerous small green flowers. Knot-grass Tribe. P. 228.

83. Scleranthus. *Calyx* 5-cleft, contracted at the mouth of the tube; *petals* 0.—A low, repeatedly forked, herbaceous plant, with linear leaves and small green flowers. Knawel Tribe. P. 535.

84. Chenopodium.
85. Suæda.
86. Beta.
87. Sálsola.

Sepals 5, sometimes combined at the base; *petals* 0; *seed* 1, enclosed by the calyx.—Herbaceous or somewhat shrubby plants, with fleshy leaves and green flowers. Goose-foot Tribe. P. 528.

88. Polýgonum. *Perianth* single, coloured; *seed* 1, enclosed in the perianth, not winged.—Herbaceous plants, with alternate leaves and sheathing stipules. Persicaria Tribe. P. 537.

89. Ulmus. *Perianth* single, coloured; *seed* 1, winged all round.—Lofty trees with purplish flowers, which appear before the rough leaves. Elm Tribe. P. 564.

Order III. TRIGYNIA. 3 *Pistils*.

* *Perianth double.*

90. Viburnum.
91. Sambúcus.

Corolla of 1 petal, superior; *fruit* a berry.—Shrubs with white flowers growing in cymes. Woodbine Tribe. P. 295.

92. Támarix. *Stigmas* sessile, feathery; *seeds* tufted with down.—A shrub or small tree, with long, flexible branches, scale-like leaves, and rose-coloured flowers. Tamarisk Tribe. P. 222.

93. Corrigíola. *Seed* 1.—A small herbaceous plant, with prostrate stems, strap-shaped leaves, and tufted white flowers. Knot-grass Tribe. P. 228.

94. Spergularia. *Petals* entire; seeds in a capsule, not tufted with down.—Small plants with prostrate stems, narrow fleshy leaves, and pink flowers. Knot-grass Tribe. P. 228.

95. Stellaria.
96. Holosteum.
Petals 2 cleft, *seeds* in a capsule, not tufted with down.—Small herbaceous plants, with opposite leaves and white flowers. Chickweed Tribe. P. 87.

** *Perianth single.*

97. Chenopodium. *Seed* 1.—Herbaceous or somewhat shrubby plants, with fleshy leaves and green flowers. Goose-foot Tribe. P. 528.

Order IV. TETRAGYNIA. 4 *Pistils.*

98. Parnassia.—An erect herbaceous plant, with handsome, solitary, cream-coloured flowers, beautifully veined. Sundew Tribe. P. 79.

Order V. PENTAGYNIA. 5 *Pistils.*

99. Státicé.
100. Arméria.
Petals bearing the stamens.—Sea-side plants with handsome flowers, remarkable for the membranaceous or chaffy character of the calyx. Thrift Tribe. P. 522.

101. Linum. *Petals* alternate with the stamens; *capsule* 10-celled.—Slender plants with narrow leaves and ornamental flowers, the petals of which soon fall off. Flax Tribe. P. 107.

102. Cerastium. *Petals* 2 cleft, *capsule* 1-celled, many-seeded.—Herbaceous plants with opposite leaves and white flowers. Chickweed Tribe. P. 87.

103. Spérgula. *Petals* entire, *capsule* 1-celled, many-seeded.—A small herbaceous plant, with whorled leaves and white flowers. Knot-grass Tribe. P. 228.

104. Sibbaldia. *Petals* and *stamens* inserted on the calyx.—A humble alpine plant, with ternate leaves and yellowish flowers, of which the stamens and pistils are very variable in number. Rose Tribe. P. 171.

Order VI. HEXAGYNIA. 6 *Pistils.*

105. Drósera.—Bog plants of humble growth, remarkable for having their leaves clothed with red, viscid hairs. Sun-dew Tribe. P. 79.

Order VII. POLYGYNIA. *Many Pistils.*

106. Myosúrus.—A small plant with narrow leaves and minute flowers, the pistils of which are crowded on a common receptacle, so as to resemble a mouse's tail. Crowfoot Tribe. P. 2.

Class VI. HEXANDRIA. 6 *Stamens of equal length.*

Order I. MONOGYNIA. 1 *Pistil.*

* *Perianth double.*

1. Bérberis.—*Sepals* 6, soon falling off; *fruit* a berry.—A thorny shrub with drooping clusters of yellow flowers. Barberry Tribe. P. 22.

2. Frankenia. *Calyx* 6-cleft.—A sea-side plant with prostrate, wiry stems, linear leaves, and axillary rose-coloured flowers. Sea-heath Tribe. P. 84.

3. Peplis. 4. Lythrum.	*Calyx* in 12 divisions, 6 alternately smaller.—Herbaceous marsh plants, with opposite leaves and 4-cornered stems. Loosestrife Tribe. P. 219.

** *Perianth single, superior.*

5. Leucójum. 6. Galanthus. 7. Narcissus.	Plants with bulbous roots and showy flowers, which before expansion are enclosed in a sheath. Amaryllis Tribe. P. 598.

*** *Perianth single, inferior.*

8. Aspáragus. 9. Convallaria. 10. Polygonatum. 11. Agraphis. 12. Scilla. 13. Ornithógalum. 14. Allium. 15. Gágea. 16. Túlipa. 17. Fritillaria. *Perianth* of 6 petals, or 6-cleft; *anthers* bursting inwards.—Herbaceous plants often with bulbous roots, bearing showy or (in Aspáragus) small green flowers. Lily Tribe. P. 607.

18. Juncus. 19. Lúzula. 20. Narthécium.	*Sepals* or *petals* 6, chaffy; *filaments* downy.—Mostly marsh plants with pithy or jointed leaves and greenish flowers; but Narthécium has yellow flowers and sword-shaped leaves, and Lúzula hairy, grass-like leaves. Rush Tribe. P. 622.

21. Ácorus. *Flowers* sessile on a long central column or *spadix.*—An aquatic plant, the sword-shaped leaves of which are fragrant when crushed. Cuckoo-pint Tribe. P. 639.

22. Polýgonum. *Perianth* 5-cleft; *seed* 1.—Herbaceous plants with alternate leaves and sheathing stipules. Persicaria Tribe. P. 537.

Order II. DIGYNIA. 2 *Pistils.*

23. Oxýria.—An alpine, herbaceous plant, with

kidney-shaped, juicy leaves and greenish flowers: whole plant acid. PERSICARIA TRIBE. P. 537.

ORDER III. TRIGYNIA. 3 *Pistils.*

24. RUMEX. *Seed* 1, 3-cornered.—Herbaceous plants with astringent leaves, which have sheathing stipules, reddish stems, and panicled, green flowers. PERSICARIA TRIBE. P. 537.

25. TOFIELDIA. *Flowers* with a 3-lobed *bract* at the base of each stalk.—A humble mountain-bog plant, with sword-shaped leaves and yellowish, spiked flowers. MEADOW-SAFFRON TRIBE. P. 620.

26. TRIGLÓCHIN. *Sepals* 6 ; *carpels* 3—6, 1-seeded. Sea-side or marsh plants, with linear fleshy leaves, and slender spikes of inconspicuous green flowers. ARROW-GRASS TRIBE. P. 634.

27. CÓLCHICUM. *Perianth* funnel-shaped, with a very long tube, coloured.—A bulbous-rooted plant, with broad leaves which wither before the flowers appear, and large, handsome, light-purple flowers. MEADOW-SAFFRON TRIBE. P. 620.

28. ELATÍNÉ. *Sepals* 3 ; *petals* 3 ; *capsule* 3-valved. —A minute aquatic plant, with rooting stems and opposite leaves. WATER-WORT TRIBE. P. 86.

ORDER IV. HEXAGYNIA. 6 *Pistils.*

29. ACTÍNOCARPUS. An herbaceous aquatic, remarkable for the star-like arrangement of its carpels. WATER-PLANTAIN TRIBE. P. 631.

ORDER V. POLYGYNIA. *Many Pistils.*

30. ALISMA. Herbaceous aquatics with smooth leaves and lilac flowers, each containing 3 sepals and 3 petals. WATER-PLANTAIN TRIBE. P. 631.

Class VII. HEPTANDRIA. 7 *Stamens.*

Order I. MONOGYNIA. 1 *Pistil.*

1. Trientális. A northern herbaceous plant, with oblong, smooth leaves, and several terminal white flowers on slender stalks. Primrose Tribe. P. 510.

Class VIII. OCTANDRIA. 8 *Stamens.*

Order I. MONOGYNIA. 1 *Pistil.*

* *Perianth double, inferior.*

1. Acer. *Capsules* 2, each furnished with a long wing.—Trees with lobed leaves and green flowers, which expand at the same time with the leaves. Maple Tribe. P. 121.

2. Chlora. *Calyx* 8-cleft; *corolla* 8-lobed.—An erect herbaceous plant, remarkable for the glaucous hue of its leaves, and for its yellow flowers, which expand only in fine weather. Gentian Tribe. P. 412.

3. Monótropa. *Flowers* in a cluster, the terminal one with 5 *sepals*, the lateral ones with 4.—A parasitic plant, consisting of a juicy stalk without leaves, and a drooping cluster of brownish flowers.—Bird's-nest Tribe.. P. 402.

4. Eríca.
5. Callúna.
6. Menziésia.

Calyx of 4 *sepals* or 4-cleft; *corolla* of 1 *petal*, 4-cleft.—Shrubs with evergreen, often rigid, opposite, or whorled leaves, and beautiful flowers. Heath Tribe. P. 392.

** *Perianth double, superior.*

7. Vaccínium. *Corolla* of 1 petal, 4-cleft.—Small shrubs with simple alternate leaves, and bell- or wheel-shaped flowers. Cranberry Tribe. P. 389.

8. Œnothéra.
9. Epilóbium.

Petals 4.—Herbaceous plants with purple or yellow flowers and 4-valved capsules. Willow-herb Tribe. P. 208.

*** *Perianth single.*

10. Daphné. *Corolla* 4-cleft.—A shrub bearing leaves only near the summit of the stem, intermixed with drooping tufts of green flowers. Daphne Tribe. P. 544.

Order II. DIGYNIA. 2 *Pistils.*

11. Polýgonum. *Perianth* single, deeply 5-cleft; *seed* 1.—Herbaceous plants with alternate leaves and sheathing stipules. Persicaria Tribe. P. 537.

12. Scleranthus. *Perianth* single, contracted at the mouth, 4-cleft; *seed* 1.—A humble herbaceous plant, with repeatedly forked stems, linear leaves, and small green flowers. Knawel Tribe. P. 535.

13. Chrysosplenium. *Perianth* single, *capsule* 2-beaked, many seeded.—Herbaceous aquatic plants with juicy stems and leaves, and small greenish yellow flowers. Saxifrage Tribe. P. 241.

Order III. TRIGYNIA. 3 *Pistils.*

14. Polýgonum. Herbaceous plants with alternate leaves and sheathing stipules. Persicaria Tribe. P. 537.

Order IV. TETRAGYNIA. 4 *Pistils.*

15. Paris. *Sepals* 8, 4 alternately smaller; *fruit* a berry.—An herbaceous plant, with an erect stem, bearing 4 large leaves and a single, stalked, green flower.—Herb-Paris Tribe. P. 606.

16. Adoxa. *Flowers* in a terminal head.—A delicate little plant, with a few bright green leaves and a round head of green flowers. Ivy Tribe. P. 286.

17. Elatíné. *Sepals* 5; *petals* 4, coloured; *capsule* 4-celled.—A minute aquatic plant, with rooting stems and opposite leaves. Water-wort Tribe. P. 86.

18. MŒNCHIA. *Sepals* 4; *petals* 4, coloured; *capsule* 1-celled.—A humble herbaceous plant, with opposite linear leaves and solitary flowers. CHICKWEED TRIBE. P. 87.

CLASS IX. ENNEANDRIA. 9 *Stamens.*

ORDER I. HEXAGYNIA. 6 *Pistils.*

1. BÚTOMUS.—An aquatic plant with long, sword-shaped leaves, and tall stalks bearing each an umbel of handsome rose-coloured flowers. FLOWERING-RUSH TRIBE. P. 629.

CLASS X. DECANDRIA. 10 *Stamens.*

ORDER I. MONOGYNIA. 1 *Pistil.*

* *Ovary superior.*

1. MONÓTROPA. *Flowers* in a cluster, the terminal one with 5 *sepals*, the lateral ones with 4.—A parasitic plant, consisting of a juicy stalk without leaves, and a drooping cluster of brownish flowers. BIRD'S-NEST TRIBE. P. 402.

2. PÝROLA. *Sepals* 5; *corolla* of 5 deep lobes or petals. Somewhat shrubby plants, with unbranched stems, simple, smooth, evergreen leaves, and large, often fragrant flowers. BIRD'S-NEST TRIBE. P. 402.

3. MENZIESIA.
4. ANDRÓMEDA.
5. ÁRBUTUS.
{ *Calyx* deeply 5-cleft; *corolla* of 1 petal, egg-shaped.—Shrubs with evergreen leaves and drooping flowers. HEATH TRIBE. P. 392.

* * *Ovary inferior.*

6. VACCÍNIUM. *Corolla* of 1 petal.—Small shrubs with simple, alternate leaves, and bell- or wheel-shaped flowers. CRANBERRY TRIBE. P. 389.

Order II. DIGYNIA. 2 *Pistils.*

* *Perianth single.*

7. Polýgonum. *Perianth* deeply 5-cleft ; *seed* 1.—Herbaceous plants with alternate leaves and sheathing stipules. Persicaria Tribe. P. 537.

8. Scleranthus. *Perianth* contracted at the mouth, 5-cleft ; *seed* 1.—A humble herbaceous plant, with repeatedly forked stems, linear leaves, and small green flowers. Knawel Tribe. P. 535.

9. Chrysosplenium. *Capsule* 2-beaked, many-seeded.—Herbaceous aquatic plants, with juicy stems and leaves, and small greenish yellow flowers. Saxifrage Tribe. P. 241.

* * *Perianth double.*

10. Saxífraga. *Petals* 5 ; *capsule* opening with valves or teeth.—Mostly alpine herbaceous plants, with tufted leaves and panicled large flowers. Saxifrage Tribe. P. 241.

11. Dianthus.
12. Saponaria.

Petals 5 ; *capsule* 1-celled, opening with teeth.—Herbaceous plants with glaucous, opposite leaves, and terminal handsome flowers. Pink Tribe. P. 87.

Order III. TRIGYNIA. 3 *Pistils.*

13. Polygonum. *Perianth* single ; *seed* 1.—Herbaceous plants with alternate leaves and sheathing stipules. Persicaria Tribe. P. 537.

14. Siléné.
15. Stellaria.
16. Honckenya.
17. Arenaria.
18. Maláchium.
19. Cherleria.

Sepals 5 ; *petals* 5 ; *capsule* many-seeded.—Herbaceous plants with opposite leaves and terminal flowers. Cherleria is often without petals. Pink and Chickweed Tribes. P. 87.

ORDER IV. PENTAGYNIA. 5 *Pistils.*

* *Perianth inferior ; carpels* 5.

20. SIBBALDIA. *Petals* and *stamens* inserted on the mouth of the calyx.—A humble alpine plant, with ternate leaves and yellowish flowers, of which the stamens and pistils are very variable in number. ROSE TRIBE. P. 171.

21. COTYLÉDON. }
22. SEDUM. } *Petals* and *stamens* inserted in the bottom of the calyx.—Herbaceous plants, remarkable for their thick, fleshy leaves. STONECROP TRIBE. P. 232.

* *Perianth inferior ; capsule* 1.

23. OXALIS. *Sepals* 5 ; *petals* 5 ; *capsule* 5-celled ; *seeds* enclosed each in an elastic case.—Herbaceous plants with ternate leaves and delicate flowers. WOOD-SORREL TRIBE. P. 131.

24. SILÉNÉ. 25. LYCHNIS. 26. AGROSTEMMA. 27. STELLARIA. 28. CERÁSTIUM. *Sepals* 5 ; *petals* 5 ; *capsule* 1-celled.—Herbaceous plants with opposite leaves and terminal flowers. PINK and CHICKWEED TRIBES. P. 87.

* * *Perianth superior.*

29. ADOXA. *Flowers* in a terminal head.—A delicate little plant, with a few bright green leaves, and a round head of green flowers. IVY TRIBE. P. 286.

CLASS XI. DODECANDRIA. 12 *to* 18 *Stamens.*

ORDER I. MONOGYNIA. 1 *Pistil.*

1. ÁSARUM. *Perianth* single, 3-cleft.—An herbaceous plant, with 2 shining leaves and a solitary, drooping, greenish flower. BIRTHWORT TRIBE. P. 547.

LYTHRUM. *Calyx* with 12 divisions, alternately smaller ; *petals* 5.—Herbaceous plants with 4-cornered stems, opposite leaves, and purple flowers. Loosestrife Tribe. P. 219.

Order II. DIGYNIA. 2 *Pistils.*

3. Agrimonia. A rough herbaceous plant, with pinnate leaves and spiked, yellow flowers. Rose Tribe. P. 171.

Order III. TRIGYNIA. 3 *Pistils.*

4. Reséda. Herbaceous or somewhat shrubby plants with furrowed stems, smooth leaves, and terminal spikes or clusters of greenish flowers. Rocket Tribe. P. 72.

Order IV. TETRAGYNIA. 4 *Pistils.*

5. Tormentilla. Herbaceous plants, with slender stems, quinate leaves, and bright yellow flowers. Rose Tribe. P. 171.

Order V. DODECAGYNIA.

6. Sempervívum. A succulent, herbaceous plant, with remarkably thick leaves, and a terminal cyme of dull purple flowers. Stonecrop Tribe. P. 232.

Class XII. ICOSANDRIA. 20 *or more Stamens placed on the Calyx.*

All the genera in this Class belong to the Natural Order Rosaceæ. Rose Tribe. P. 171.

Class XIII. POLYANDRIA. *Many Stamens inserted in the Receptacle.*

Order I. MONOGYNIA. 1 *Pistil.*

1. Delphínium. *Sepals* 5, coloured, the upper one spurred.—A slender, herbaceous plant, with terminal

clusters of irregular, blue flowers. Crowfoot Tribe. P. 2.

2. Papáver.
3. Meconopsis.
4. Glaucium.
5. Chelidonium.

Sepals 2; *petals* 4.—Herbaceous plants with showy flowers, and abounding in white or yellow juice, which is narcotic. Poppy Tribe. P. 27.

6. Actæa. *Sepals* 4; *petals* 4.—An herbaceous plant with triangular stems, twice-ternate leaves, and terminal clusters of white flowers.—Crowfoot Tribe. P. 2.

7. Heliánthemum. *Sepals* 5, the two outer smallest, or sometimes wanting; *petals* 5.—Small shrubs with oblong leaves and showy, white or yellow flowers. Rock-rose Tribe. P. 74.

8. Tília. *Sepals* 5, equal; *petals* 5.—Lofty trees with heart-shaped leaves, and yellow flowers which grow several together from the middle of an oblong bract. Lime Tribe. P. 115.

9. Nymphæa.
10. Nuphar.

Sepals and *petals* numerous.—Aquatic plants with floating leaves and large white or yellow flowers. Water-lily Tribe. P. 25.

Order II. PENTAGYNIA. 2—6 *Pistils.*

11. Reséda. *Flowers* irregular; *capsule* solitary, open at the top.—Herbaceous or somewhat shrubby plants with furrowed stems, smooth leaves, and terminal spikes or clusters of greenish flowers. Rocket Tribe. P. 72.

All the remaining plants in this Order belong to the Crowfoot Tribe. P. 2.

Order III. POLYGYNIA. *Many Pistils.*

All the plants of this Order belong to the Crowfoot Tribe. P. 2.

CLASS XIV. DIDYNAMIA. 4 *Stamens*, 2 *longer than the other* 2.

ORDER I. GYMNOSPERMIA. *Ovaries* 4, 1-*seeded.*

1. VERBÉNA. *Corolla* slightly irregular; *Ovaries* united.—An erect herbaceous plant, with a roughish stem, and terminal slender spikes of small lavender flowers. VERVAIN TRIBE. P. 504.

All the remaining plants of this order belong to the LABIATE TRIBE. P. 474.

ORDER II. ANGIOSPERMIA. *Ovary single, many-seeded.*

2. LINNÆA. *Corolla* bell-shaped, regular.—A beautiful northern plant with trailing stems, roundish leaves, and delicate pink flowers, which hang in pairs from the summit of a slender stalk. WOODBINE TRIBE. P. 295.

3. OROBANCHÉ.
4. LATHRÆA.
} *Flowers* irregular, forming a spike on a leafless scaly stalk.—Parasitic herbaceous plants, remarkable for being entirely destitute of leaves. BROOM-RAPE TRIBE. P. 449.

All the remaining plants of this order belong to the FIGWORT TRIBE. P. 453.

CLASS XV. TETRADYNAMIA. 6 *Stamens*, 4 *long and* 2 *short.*

All the plants in this class belong to the CRUCIFEROUS TRIBE. P. 36.

CLASS XVI. MONADELPHIA. *Stamens united by their filaments into* 1 *set.*

ORDER I. PENTANDRIA. 5 *Stamens.*

1. ERÓDIUM.
2. GERÁNIUM.
} *Ovary* of 5 carpels, placed round a long awl-shaped beak.—Herbaceous plants with lobed or compound leaves and purple flowers. GERANIUM TRIBE. P. 123.

3. Linum. *Capsule* 10-celled.—Herbaceous plants with slender stems, narrow leaves, and delicate flowers, Flax Tribe. P. 107.

Order II. DECANDRIA. 10 *Stamens.*

4. Geránium. *Ovary* of 5 carpels, placed round a long awl-shaped beak.—Herbaceous plants with lobed or compound leaves and purple flowers. Geranium Tribe. P. 123.

2. Óxalis. *Capsule* 5-celled.—Herbaceous plants with ternate leaves and delicate flowers. Wood-sorrel Tribe. P. 131.

3. Ulex. 4. Genista. 5. Onónis. 6. Anthyllis. *Flowers* papilionaceous.—Shrubs or herbs, well distinguished by the peculiar form of their corolla, and by their 2-valved capsules or legumes. Pea and Bean Tribe. P. 139.

Order. III. POLYANDRIA. 20 *Stamens or more.*

All the plants in this order belong to the Mallow Tribe. P. 110.

Class XVII. DIADELPHIA. *Stamens combined by their filaments into 2 sets.*

Order I. HEXANDRIA. 6 *Stamens.*

1. Corýdalis.
2. Fumária.

Sepals 2 ; *petals* 4, unequal, one of them swollen or spurred at the base.—Herbaceous plants, often with long climbing stems and clusters of small flowers. Fumitory Tribe. P. 33.

Order II. OCTANDRIA. 8 *Stamens.*

3. Polýgala. *Sepals* 5, the two inner large and petal-like : *petals* combined with the filaments. Milkwort Tribe. P. 83.

ORDER III. DECANDRIA. 10 *Stamens.*

All the plants in this order have papilionaceous flowers, with the stamens combined into 2 sets of 9 and 1. PEA AND BEAN TRIBE. P. 139.

CLASS XVIII. POLYADELPHIA. *Stamens combined by their filaments into 3 or more sets.*

All the plants in this class belong to the ST. JOHN'S-WORT TRIBE. P. 117.

CLASS XIX. SYNGENESIA. *Stamens united by their anthers into a tube; Flowers compound.*

All the plants in this class belong to the COMPOUND FLOWERS. P. 319.

CLASS XX. GYNANDRIA. *Stamens growing in the pistil, and united with it.*

ORDER I. MONANDRIA. 1 *Stamen, and*

ORDER II. DIANDRIA. 2 *Stamens.*

All the plants in these two orders belong to the ORCHIDEOUS TRIBE. P. 582.

ORDER III. HEXANDRIA. 6 *Stamens.*

1. ARISTOLÓCHIA. *Perianth* single, tubular, curved. —A climbing plant with heart-shaped leaves, and pale yellow flowers, the tube of which is swollen at the base and contracted near the mouth. BIRTHWORT TRIBE. P. 547.

CLASS XXI. MONŒCIA. *Stamens and Pistils in separate flowers on the same plant.*

ORDER I. MONANDRIA. 1 *Stamen.*

1. EUPHÓRBIA. Several *barren flowers,* and 1 *fertile,*

contained in a *bract*, or involucre of 1 leaf; *ovary* 3-lobed, 3-seeded.—Herbaceous plants abounding in acrid, milky juice, branched principally above, and bearing many green flowers. SPURGE TRIBE. P. 549.

2. CALLÍTRICHÉ. *Ovary* 4-lobed; *styles* 2.—Small aquatic plants with opposite leaves, inconspicuous axillary flowers without petals, and 4-seeded fruit. WATER-STARWORT TRIBE. P. 558.

3. ZANNICHELLIA. *Ovaries* 4, *styles* 4.—A submersed aquatic plant with numerous slender stems, linear leaves, and inconspicuous green flowers. 4. ZOSTÉRA. *Ovaries* 4; *style* 1, 2-cleft.—A submersed marine plant, with long, grassy leaves, some of which are sheathing at the base, and contain barren and fertile flowers without petals, arranged alternately in 2 rows on a common stalk. POND-WEED TRIBE. P. 644.

5. ARUM. *Stamens* and *pistils* arranged in separate rings round a common central column or *spadix*.—A curious herbaceous plant with large, glossy leaves, from among which rises a sheath containing a solid crimson column bearing a ring of stamens about the middle, and a row of pistils beneath. CUCKOO-PINT TRIBE. P. 639.

ORDER II. DIANDRIA. 2 *Stamens.*

6. CALLÍTRICHÉ. *Ovary* 4-lobed; *styles* 2.—Aquatic plants with opposite leaves, inconspicuous, axillary flowers without petals, and 4-seeded fruit. WATER-STARWORT TRIBE. P. 558.

7. LEMNA. *Ovary* 1-celled; *style* 1; *stigma* 1.—Minute, stemless, aquatic, floating plants, consisting entirely of a few thread-like roots and fleshy leaves, embedded in which last flowers are produced, but rarely. DUCKWEED TRIBE. P. 643.

8. CAREX. *Inflorescence* in terminal spikes formed of chaffy scales or *glumes*, with a flower at the

base of each. SEDGE TRIBE. Not described in this work. (See Miss Pratt's "Grasses and Sedges.")

ORDER III. TRIANDRIA. 3 *Stamens.*

9. TYPHA. *Inflorescence* in a large terminal spike, the upper part of which contains *stamens* only, the lower *pistils* only. 10. SPARGÁNIUM. *Inflorescence* in globular heads, of which the upper ones contain *stamens* only, the lower *pistils* only.—Aquatic plants with linear leaves growing on the margins of rivers and ponds. REED-MACE TRIBE. P. 635.

* Many of the SEDGE TRIBE belong to this order; their *inflorescence* is in terminal spikes, formed of chaffy scales or *glumes*, with a flower at the base of each. Not described in this work. (See Miss Pratt's "Grasses and Sedges.")

ORDER IV. TETRANDRIA. 4 *Stamens.*

11. LITTORELLA. *Barren flower: sepals* 4; *petals* 4; *stamens* very long.—*Fertile flower: ovary* 1-seeded; *style* very long.—An herbaceous marsh plant with fleshy, linear leaves, a stalked, barren flower, and sessile, fertile flowers. PLANTAIN TRIBE. P 524.

12. ALNUS. *Flowers* in catkins, the *scales* of which are 3-cleft.—A tree with smooth jagged leaves and numerous small catkins. CATKIN-BEARING TRIBE. P. 565.

13. MYRÍCA. *Flowers* in catkins, the *scales* of which are entire.—A shrub, growing in boggy ground, well-distinguished by its resinous, aromatic catkins, which appear before the leaves. CATKIN-BEARING TRIBE. P. 565.

14. BUXUS. *Sepals* 4; *styles* 3; *capsule* with 3 beaks.—A hard-wooded shrub, or small tree, with evergreen leaves and green axillary flowers. SPURGE TRIBE. P. 549.

15. Parietaria.
16. Urtíca.

Flowers in spikes or clusters; *calyx* of the *barren flower* of 4 sepals, or 4-cleft; *seed* 1.—Herbaceous plants with hairy or stinging leaves, and small, green flowers, which are remarkable for the elasticity of their stamens. Nettle Tribe P. 559.

Order V. PENTANDRIA. 5 *Stamens.*

17. Átriplex. Herbaceous or somewhat shrubby plants, with fleshy, often angular and mealy leaves, and leafy compound spikes of greenish flowers, which, as well as the foliage, are not unfrequently tinged with red. Goose-foot Tribe. P. 528.

Order VI. POLYANDRIA. *More than 5 Stamens.*

18. Myriophyllum. *Sepals* 4; *petals* 4; *stamens* 8; *pistils* 4.—Submersed aquatics, with finely-divided leaves and small whorled or spiked flowers. Mare's-tail Tribe. P. 215.

19. Cerátophyllum. *Sepals* numerous; *petals* 0; *stamens* 18—20; *pistil* 1.—Submersed aquatics with finely divided, rigid, and whorled leaves. Hornwort Tribe. P. 218.

20. Sagittaria. *Sepals* 3; *petals* 3.—An herbaceous aquatic, remarkable for its large arrow-shaped leaves, and delicate lilac flowers. Water-plantain Tribe. P. 631.

21. Potérium. *Flowers* in a round head, the *upper* fertile, the *lower* barren.—A slender herbaceous plant, with pinnate leaves, and round heads of greenish flowers, which are remarkable for their tufted pistils and long stamens. Rose Tribe. P. 171.

22. Arum. *Stamens* and *pistils* arranged in separate rings round a common central column or *spadix.*—

A curious herbaceous plant with large glossy leaves, from among which rises a sheath containing a solid crimson column, bearing a ring of stamens about the middle, and a row of pistils beneath. CUCKOO-PINT TRIBE. P. 639.

23. QUERCUS. 24. FAGUS. 25. CASTÁNEA. 26. BÉTULA. 27. CARPÌNUS. 28. CÓRYLUS. *Barren flowers* in a catkin or loose spike.—Trees, the fruit of which is a nut, wholly or in part enclosed in a tough case, with the exception of BÉTULA, the small nut of which is winged. CATKIN-BEARING TRIBE. P. 565.

ORDER VII. MONADELPHIA. *Stamens united in 1 set.*

1. PINUS. Trees with resinous wood, and linear, often rigid leaves, and bearing their fruit in *cones*. FIR-TRIBE. P. 574.

CLASS XXII. DIŒCIA. *Stamens and Pistils in separate flowers and on different plants.*

ORDER I. DIANDRIA. 2 *Stamens.*

1. SALIX. *Inflorescence* in catkins, the scales of which contain each a single flower; *stigmas* 2; *seeds* cottony.—Trees or shrubs with long, flexible branches and simple leaves. CATKIN-BEARING TRIBE. P. 565.

ORDER II. TRIANDRIA. 3 *Stamens.*

2. ÉMPETRUM. *Perianth* of several scales; *filaments* very long; *stigma* 1, rayed.—A small shrub with heath-like leaves, small flowers, and black berries. CROWBERRY TRIBE. P. 549.

3. RUSCUS. *Flowers* solitary, from the centre of the leaf; *sepals* 6; *petals* 0.—A low shrub with green branches, stout leaves each of which terminates in a thorn, small green flowers, and scarlet berries. LILY TRIBE. P. 607.

4. Valeriána. *Corolla* of one petal, bearing the stamens; *seed* 1, crowned by the calyx.—An herbaceous plant, with a simple stem, deeply-cut leaves, and a terminal corymb of light-pink flowers. Valerian Tribe. P. 309.

5. Salix. *Inflorescence* in catkins, the scales of which contain each a single flower; *stigmas* 2; *seeds* cottony.—Trees or shrubs with long, flexible branches and simple leaves. Catkin-bearing Tribe. P. 565.

Order III. TETRANDRIA. 4 *Stamens.*

6. Viscum. *Petals* 4, fleshy; *fruit* a 1-seeded berry. A parasitic shrub with green branches, leathery leaves, and conspicuous white berries. Mistletoe Tribe. P. 292.

7. Hippóphaë. *Barren flower: perianth* 2-cleft;—*fertile flower: perianth* 4-cleft; *fruit* one-seeded, berry-like.—A sea-side, thorny shrub, with silvery leaves and orange-coloured fruit. Oleaster Tribe. P. 543.

8. Rhamnus. *Calyx* 4-cleft; *petals* 4.—A thorny shrub, with simple serrated leaves, numerous greenish flowers, and black berries. Buckthorn Tribe. P. 136.

9. Myríca. *Flowers* in catkins.—A shrub, growing in boggy ground, well distinguished by its resinous, aromatic catkins, which appear before the leaves. Catkin-bearing Tribe. P. 565.

10. Urtíca. *Barren flower: sepals* 4; *petals* 0;—*fertile flower: sepals* 2; *petals* 0: *seed* 1.—An erect, scarcely branched, herbaceous plant, with opposite, stinging leaves, and small green flowers, which are remarkable for the elasticity of their stamens. Nettle Tribe. P. 559.

Order IV. PENTANDRIA. 5 *Stamens.*

11. Húmulus. *Barren flower* solitary; *sepals* 5;

petals 0;—*fertile flowers* in large membranaceous catkins.—A climbing plant with rough stems, lobed leaves, and handsome clusters of drooping catkins. NETTLE TRIBE. P. 559.

12. RÍBÉS. *Calyx* 5-cleft; *sepals* 5, inserted on the calyx; *fruit* a berry.—An alpine shrub with lobed leaves, erect clusters of green flowers, and red berries.—GOOSEBERRY AND CURRANT TRIBE. P. 239.

13. BRYÓNIA. *Calyx* 5-toothed; *sepals* 5; *filaments* 3; *anthers* 5; *fruit* a berry.—A climbing plant with elegantly lobed, downy leaves, greenish flowers and scarlet berries. GOURD TRIBE. P. 224.

14. SALIX. *Inflorescence* in catkins, the *scales* of which contain each a single flower.—A handsome shrub with long, flexible branches, glossy leaves, and seeds tufted with silky down. CATKIN-BEARING TRIBE. P. 565.

ORDER V. HEXANDRIA. 6 *Stamens.*

15. TAMUS. *Perianth* single, in 6 equal segments; *fruit* a berry.—A climbing plant, with heart-shaped, glossy leaves, small green flowers, and scarlet berries. YAM TRIBE. P. 604.

16. RUMEX. *Seed* 1, 3-cornered, enclosed in the calyx.—Herbaceous plants with erect stems, acid leaves, and panicles of green flowers tinged with red. PERSICÁRIA TRIBE. P. 537.

ORDER VI. OCTANDRIA. 8 *Stamens.*

17. PÓPULUS. *Inflorescence* in catkins, the *scales* of which are jagged; *stamens* 8—30.—Lofty trees remarkable for having the upper portion of the leaf-stalk flattened vertically. CATKIN-BEARING TRIBE. P. 565.

18. SEDUM. *Sepals* 4; *petals* 4.—A mountain plant, with thick, fleshy leaves and yellow flowers, remarkable for the rose-like scent of its roots. STONECROP TRIBE. P. 232.

ORDER VII. ENNEANDRIA. 9 *Stamens.*

19. MERCURIÁLIS. *Sepals* 3 ; *petals* 0 ; *capsule* 2-lobed.—Herbaceous plants with roughish leaves, bearing small green flowers in loose spikes. SPURGE TRIBE. P. 549.

ORDER VIII. DECANDRIA. 10 *Stamens.*

20. LYCHNIS. *Calyx* 5-cleft ; *petals* 5.—Herbaceous plants, with downy oblong leaves, and large bright-purple or white flowers. PINK TRIBE. P. 87.

ORDER IX. POLYANDRIA. *Many Stamens.*

21. STRATIÓTES. *Sepals* 3 ; *petals* 3.—A curious aquatic plant, with sword-shaped, prickly leaves, and large, white flowers, which grow from a 2-leaved sheath. FROG-BIT TRIBE. P. 579.

22. PÓPULUS. *Inflorescence* in a catkin, the *scales* of which are jagged.—Lofty trees, remarkable for having the upper portion of the leaf-stalk flattened vertically. CATKIN-BEARING TRIBE. P. 565.

ORDER X. MONADELPHIA.

Stamens united by their filaments into 1 *set.*

23. JUNÍPERUS. *Berry* formed of the united scales of the catkin, 3-seeded.—A shrub with prickly, evergreen leaves, inconspicuous flowers, and purple berries. FIR TRIBE. P. 574.

24. TAXUS. *Seed* solitary, half invested with a fleshy cup.—A hard-wooded tree, with linear, evergreen leaves, and scarlet seed-vessels. FIR TRIBE. P. 574.

ORDER XI. POLYADELPHIA.

Stamens combined by their filaments into 3 sets.

25. BRYÓNIA. *Calyx* 5-toothed; *petals* 5; *filaments* 5.—A climbing plant, with elegantly-lobed downy leaves, greenish flowers, and scarlet berries. GOURD TRIBE. P. 224.

CLASS XXIII. POLYGAMIA. *Flowers of 2 kinds; some bearing Stamens and Pistils; some, Stamens only; and some, pistils only.*

ORDER I. MONŒCIA.

All three kinds of Flowers on the same plant.

1. ÁTRIPLEX. Herbaceous, or somewhat shrubby plants, with fleshy, often angular and mealy leaves, and leafy, compound spikes of greenish flowers, which, as well as the foliage, are often tinged with red. GOOSEFOOT TRIBE. P. 528.

CLASS XXIV. CRYPTOGAMIA.

This Class, by far the most extensive in the LINNÆAN ARRANGEMENT, comprises all plants in which the existence of stamens and pistils cannot be detected. Here are placed the FERNS, MOSSES, LIVERWORTS, LICHENS, FUNGI, and SEA-WEEDS, none of which are described in this work.

NATURAL ARRANGEMENT OF PLANTS.

CLASS I. DICOTYLEDONOUS OR EXOGENOUS PLANTS.

THIS is the most extensive class in the vegetable kingdom, and derives its name from the fact that the *seeds* are composed of two, or more, lobes, called *cotyledons*, which enclose the *plumule*, or embryo of the future plant. As germination commences, the plumule lengthens downwards into a root, called in its early stage, a *radicle*: at the same time the upper extremity lengthens into a *stem*, which is composed of *bark*, *woody fibre*, *spiral vessels*, *cellular tissue*, and a central column of *pith*. The stem increases in diameter by deposits beneath the bark, but *outside* the existing fibre. Hence, the plants belonging to this class are called EXOGENOUS (increasing by additions on the outside). In all trees and shrubs of this class the wood is arranged in concentric layers, the hardest part being nearest the pith. The *leaves* are reticulated, or furnished with a network of veins. The *flowers* are furnished with stamens and

62

pistils; 5 or 4, or some multiple of 5 or 4, being the predominating number of the parts of fructification.

SUB-CLASS I.

THALAMIFLORÆ.—ORD. I—XXII.

Flowers furnished with calyx and corolla; *petals* distinct, inserted into the receptacle or *thalamus; stamens* springing from below the base of the ovary.

NATURAL ORDER I.

RANUNCULACEÆ.—THE CROWFOOT TRIBE.

Sepals generally 5; *petals* 5 or more, frequently irregular in form; *stamens* indefinite in number, inserted on the receptacle; *ovaries* generally numerous; *fruit* consisting of several one or many-seeded carpels; in *Actæa*, a berry.—An extensive tribe of plants, inhabiting for the most part the temperate regions of the globe. All the British species are herbaceous, leaves generally much divided, and flowers showy; sepals and petals often running into one another, sometimes extended into spurs. Most of them possess acrid and poisonous properties if taken into the stomach, and not a few produce wounds if applied to the skin. Some species were formerly used in medicine, and the extract of Monkshood is still employed to relieve pain in affections of the nerves. The Hellebore was held in high repute among the ancients, as a specific for madness; the garden-flower known by the familiar name of Christmas Rose belongs to this family. *Ranúnculus sceleratus* is one of the most generally diffused plants, being as common in America, and on the banks of the Ganges, as it is in our own marshes.

* *Carpels one-seeded.*

1. Clématis (Traveller's Joy).—*Sepals* 4—6, resembling petals; *corolla* wanting; *carpels* terminated by a long feathery tail. (Name from the Greek, *clêma*, a vine-shoot.)

2. Thalictrum (Meadow Rue).—*Sepals* 4—5; *corolla* wanting; *carpels* without tails. (Name from the Greek, *thallo*, to flourish.)

3. Anemóne (Wind-flower).—*Sepals* and *petals* alike, 5—15; *involucre* of 3 cut leaves, distant from the flower. (Name from the Greek, *anemos*, the wind, from the exposed place of growth.)

4. Adónis (Pheasant's Eye).—*Sepals* 5; *petals* 5—10, without a nectary at the base; *carpels* without tails. (Name from *Adonis*, a youth who was killed by a wild boar, and whose blood is fabled to have stained flowers.)

5. Ranúnculus (Crowfoot, Buttercup, Lesser Celandine, &c.)—*Sepals* 5 (rarely 3); *petals* 5 (rarely numerous), with a nectary at the base. (Name from the Latin, *rana*, a frog, an animal which frequents the kind of places where these plants grow.)

6. Myosúrus (Mouse-tail).—*Sepals* 5, prolonged at the base into a spur; *petals* 5; *carpels* crowded into a lengthened spike. (Name, Greek for a mouse's tail.)

** *Carpels many seeded.*

7. Trollius (Globe-flower).—*Sepals* about 15, resembling petals; *petals* 5 or more, small, narrow. (Name said to be derived from an old German word, signifying a *globe*.)

8. Caltha (Marsh Marigold).—*Sepals* and *petals* alike, 5 or more. (Name from the Greek, *cálathus*, a cup, which its flowers resemble.)

9. Hellébórus (Hellebore).—*Sepals* 5, petal-like, per-

sistent; *petals* small, tubular; *carpels* 3—10. (Name from the Greek, *helein*, to injure, and *bóra*, food.)

10. AQUILÉGIA (Columbine).—*Sepals* 5, petal-like, soon falling off; *petals* 5, tubular, gaping upwards, and terminating below in a curved, horn-shaped spur; *carpels* 5. (Name from the Latin, *aquila*, an eagle, to the claws of which its nectaries bear a fancied resemblance.)

11. DELPHÍNIUM (Larkspur).—*Sepals* 5, petal-like, soon falling off, the upper one helmet-shaped, with a long spur at the base; *petals* 4, the two upper on long stalks, and concealed in the spurred sepal; *carpel* 3—5. (Name from *delphin*, a dolphin, to which animal the upper sepal bears a fancied resemblance.)

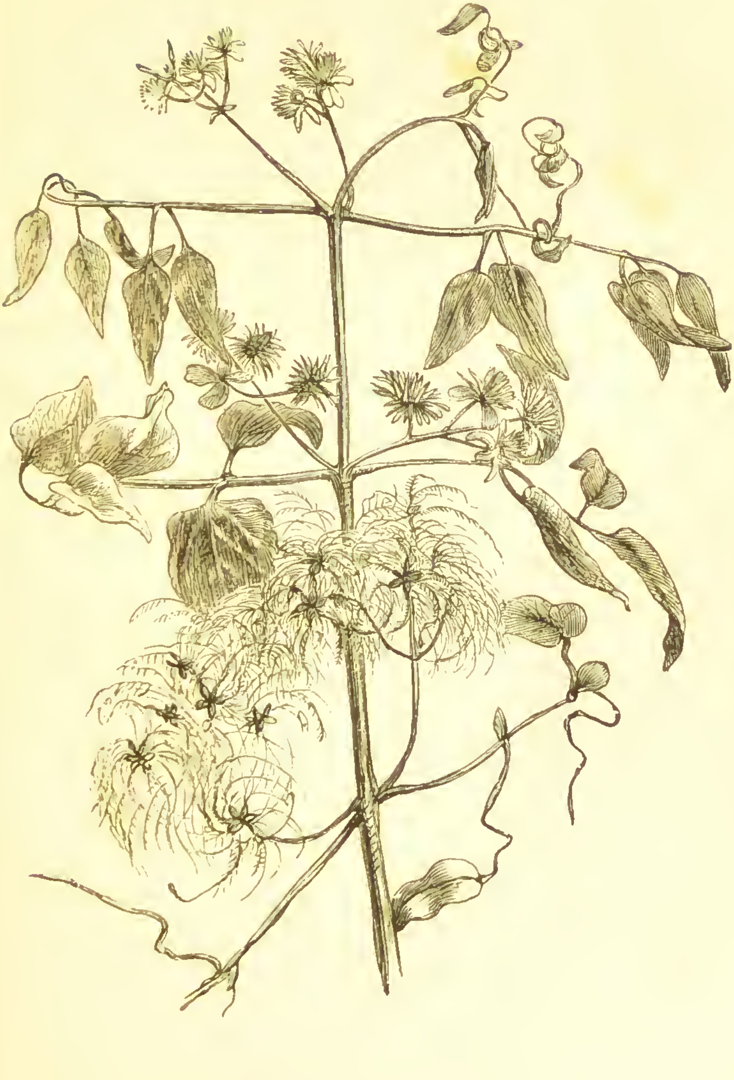
12. ACONÍTUM (Monk's-hood).—*Sepals* 5, petal-like; the upper one helmet-shaped but not spurred; *nectaries* 2, stalked, tubular at the extremity, and concealed beneath the helmet-shaped sepal; *carpels* 3—5. (Name of uncertain origin.)

13. ACTÆA (Bane-berry).—*Sepals* 4, soon falling off; *petals* 4; *fruit* a many-seeded berry. (Name from the Greek, *acté*, the elder, from the similarity of the leaves of the two plants.)

14. PÆÓNIA (Peony).—*Sepals* 5, unequal; *petals* 5—10; *carpels* 2—5, with fleshy stigmas formed of two plates. (Name from *Pæon*, a Greek physician, who is said to have cured wounds with it.)

1. CLÉMATIS.

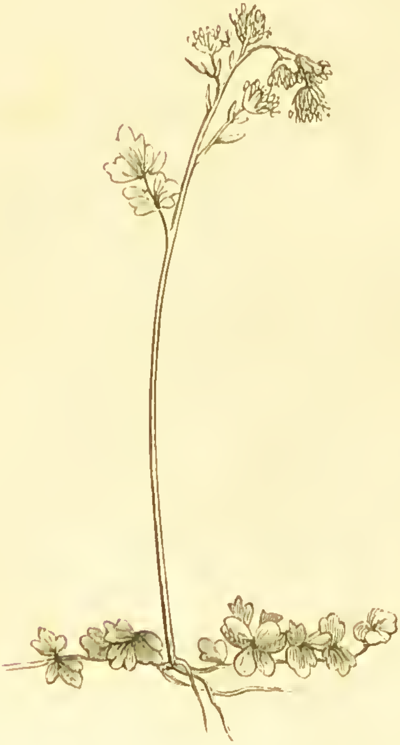
1. *C. Vitalba* (Traveller's Joy).—The only British species. A hedge-shrub, common where limestone or chalk enters largely into the composition of the soil, climbing other shrubs by the help of its twisting leaf stalks; well distinguished in summer by its numerous greenish-white flowers, and in autumn and winter rendered yet more conspicuous by its tufts of feathered seed-vessels, popularly known by the name of "Old Man's Beard." It received its name from "decking and



CLÉMATIS VITALBA (*Traveller's Joy*).

adorning waies and hedges where people travel."—Fl. May, June. Perennial.

2. Thalictrum (Meadow Rue).



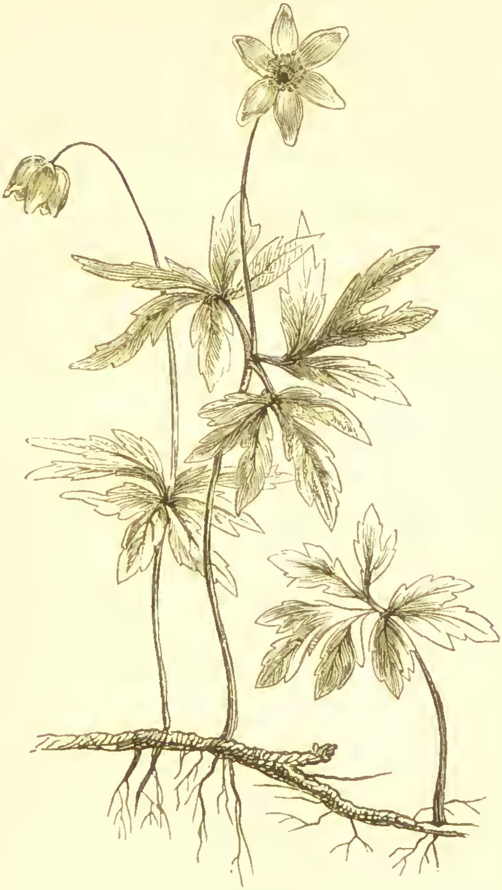
THALICTRUM ALPÍNUM (*Alpine Meadow Rue*).

1. *T. alpínum* (Alpine Meadow Rue). — *Stem* unbranched; *flowers* in a simple terminal cluster, drooping when fully expanded. — A graceful little plant, from 4 to 6 inches high, common on the mountains of Scotland and Wales.—Fl. June, July. Perennial.

2. *T. minus* (Lesser Meadow Rue). — *Stem* zigzag, branched; *leaves* thrice pinnate; *leaflets* three-cleft, glaucous; *flowers* on slender stalks, drooping.—In limestone and chalky pastures, or on banks of shell-sand, among bushes; 1—2 feet high. Often detected, like the following, by its conspicuous yellow stamens.—Fl. June, July. Perennial.

3. *T. flavum* (Yellow Meadow Rue).—*Stem* erect, branched; *leaves* twice pinnate; *flowers* crowded, erect. —Not uncommon about the banks of ditches and rivers; 4—4 feet high.—Fl. June, July. Perennial.

3. ANEMONE (*Wind-flower*).



ANEMONE NEMORÓSA (*Wood Anemone*)

1. *A. nemorósa* (Wood Anemone, Wind-flower).—*Flower* drooping; *sepals* or *petals* 6; *carpels* without tails.—This is one of our most beautiful spring flowers, adorning our upland woods at the season when primroses and violets are in perfection. The petals and sepals are generally white, but not unfrequently tinged

with pink externally; more rarely they are of a delicate sky-blue, both within and without.—Fl. March—May. Perennial.

2. *A. Pulsatilla* (Pasque-flower).—*Flower* slightly drooping; *sepals* or *petals* 6; *carpels* with feathery tails.—In high chalky pastures, not nearly so common as the last. The flowers are of a violet blue, and appear about the season of Easter (*Pâques*), from which the plant derives its name.—Fl. April, May. Perennial.

* Two other species of Anemone are described by British botanists, *A. Apennína* and *A. ranunculoídes*, but they are doubtful natives, and rarely met with. The former has blue flowers, of 12 or more *petals* or *sepals*, and the latter has yellow flowers.

4. Adónis (Pheasant's Eye).

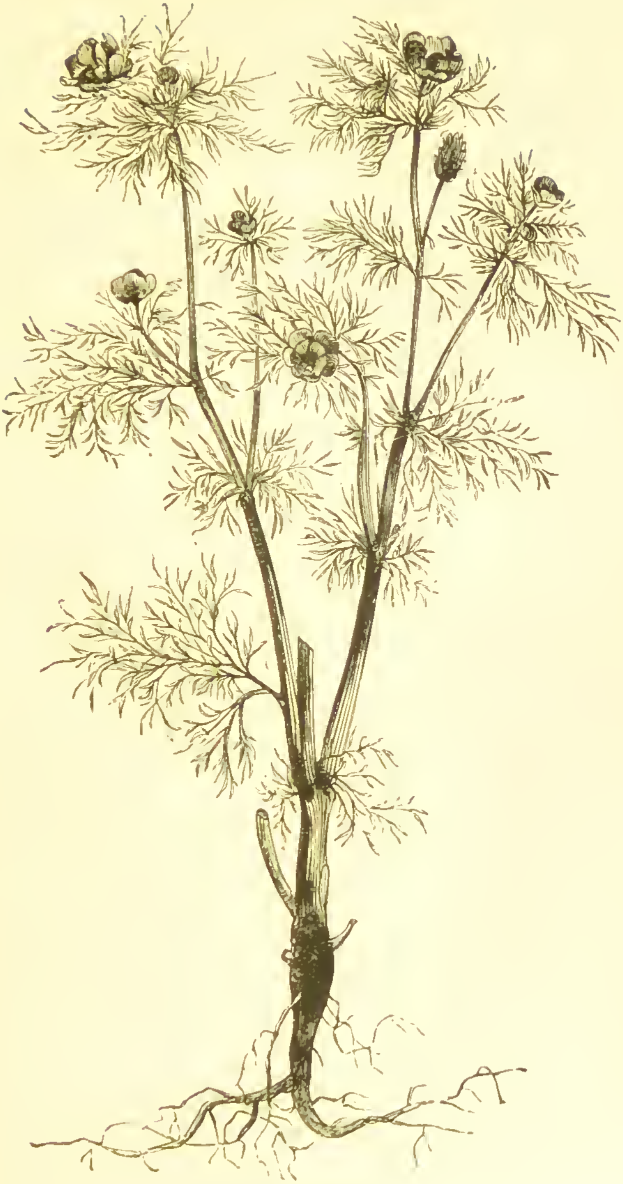
1. *A. autumnális.*—The only British species. A pretty herbaceous plant, with finely cut leaves and bright scarlet flowers, which in shape are very like buttercups. It occurs as a weed in corn-fields, but is not supposed to be a native.—Fl. Sept., Oct. Annual.

5. Ranúnculus (Buttercup, &c.)

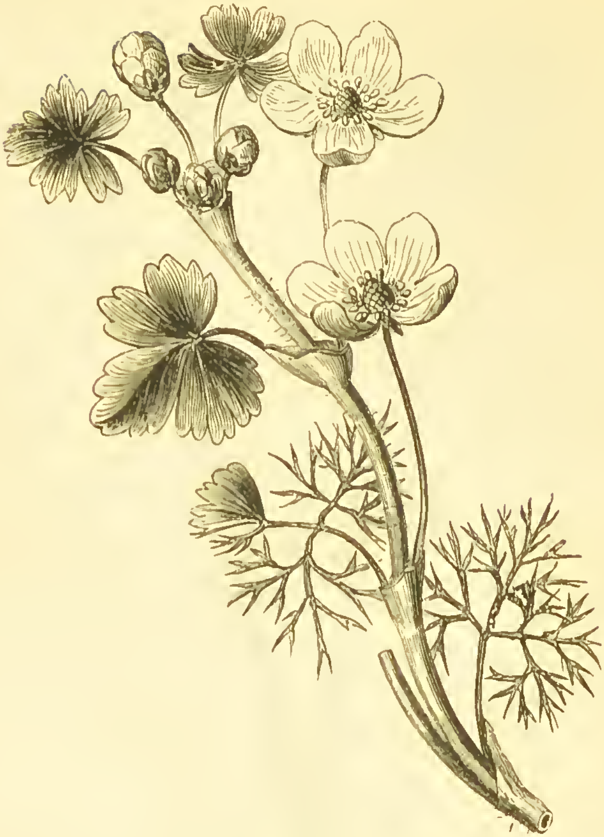
* *Flowers white.*

1. *R. aquátilis* (Water Crowfoot).—*Stem* submersed; *lower leaves* deeply cleft into hair-like segments, *upper ones* floating, three-lobed, variously cut.—A very variable plant: when growing in swiftly running water the plant is wholly composed of hair-like leaves; but when growing in stagnant water it produces flattened leaves as well, and abundance of large showy flowers. The foliage of this species is destitute of the acrid properties which exist in the rest of the genus.—Fl. May—July. Perennial.

2. *R. hederáceus* (Ivy-leaved Crowfoot).—*Leaves* all rounded and lobed; *petals* scarcely longer than the calyx; *stamens* 5—10.—Smaller than the last, growing either in water, or close to the water's edge.—Fl. all the summer. Perennial.



ADÓNIS (*Pheasant's Eye*).

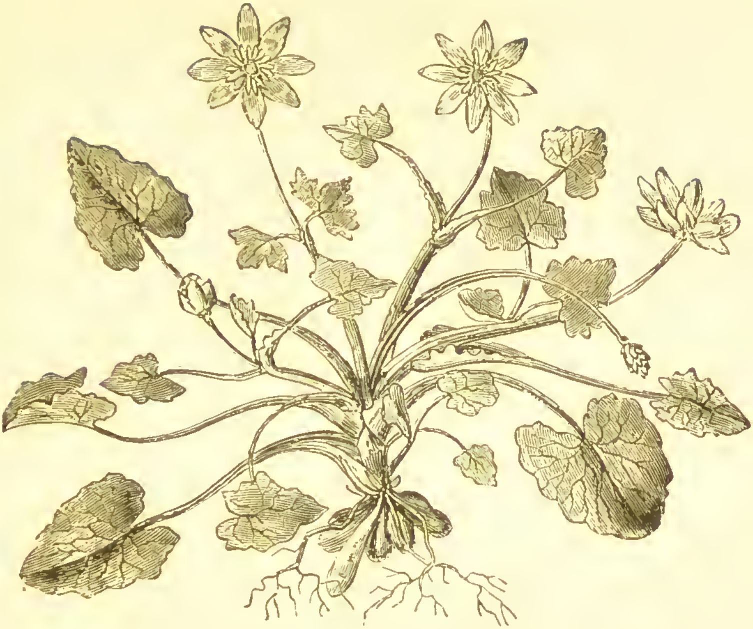


R. AQUÁTILIS (*Water Crowfoot*).

** *Flowers yellow; leaves undivided.*

3. *R. Lingua* (Great Spear-wort).—*Leaves* narrow, tapering to a point, sessile: *stem* erect.—The largest British species, 2--4 feet high, growing in watery places.—Fl. July. Perennial.

4. *R. Flámmula* (Lesser Spear-wort).—*Leaves* narrow, tapering to a point, slightly stalked; *stem* creeping at the base.—Sides of watery places, much smaller than the last; leaves sometimes clothed with silky hairs.—Fl. June—August. Perennial.



R. FICARIA (*Lesser Celandine*).

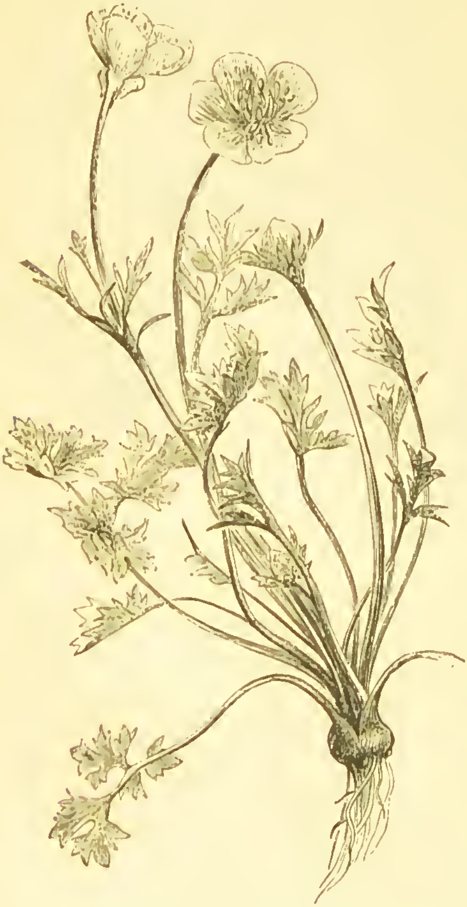
5. *R. Ficaria* (Lesser Celandine).—*Leaves* heart- or kidney-shaped, angular; *sepals* 3; *petals* about 9.—One of our brightest spring flowers, studding every bank with its numerous glossy star-like flowers. It is placed by some botanists in a distinct genus, when it is called *Ficaria verna*.—Fl. March—May. Perennial.

*** *Flowers yellow; leaves divided; carpels smooth.*

6. *R. auricomus* (Wood Crowfoot).—*Leaves* smooth, lower ones kidney-shaped, lobed; upper ones deeply divided; *petals* unequal in size.—Woods, common. *Flowers* mostly irregular, owing to some of the petals being imperfectly developed.—Fl. April, May. Perennial.

7. *R. sceleratus* (Celery-leaved Crowfoot).—*Leaves* smooth, cut into oblong segments; *stem* hollow, juicy; *carpels* collected into an oblong head.—A highly acrid

species, from 6 inches to 2 feet high, growing in watery places in most parts of the world. *Leaves* glossy; *petals* inconspicuous.—Fl. June—August. Annual.



R. BULBOSUS (*Bulbous Buttercup*).

8. *R. bulbosus* (Bulbous Buttercup). — *Calyx* reflexed; *flower-stalks* channeled; *root* bulbous. —This is by children associated with the two following, under the name of Buttercups. Meadows.—Fl. May, June. Perennial.

9. *R. repens* (Creeping Buttercup). — *Calyx* spreading; *flower-stalks* channeled; *root* creeping. —Moist meadows and sides of ditches. A troublesome weed, increasing by creeping shoots, or *scions*, which take root wherever a leaf is produced.—Fl. June—August. Perennial.

10. *R. acris* (Meadow Crowfoot). — *Calyx* spreading; *flower-stalks* cylindrical, not furrowed; *root* composed of long fibres.—Meadows, common. Well distinguished from the preceding by the above characters, as well as by its slender stem, and by the narrower segments of its upper leaves.—Fl. June, July. Perennial. A double variety is common in gardens, under the name of Yellow Bachelor's Buttons.

**** *Flowers yellow; leaves divided; carpels not smooth.*

11. *R. hirsútus* (Pale Hairy Buttercup).—*Calyx* reflexed; *root* fibrous; *carpels* margined, and rough with small warts.—Meadows and waste ground. Smaller than either of the last three, for stunted specimens of which it might be mistaken.—Fl. June—October. Annual. A double variety is sometimes found wild.

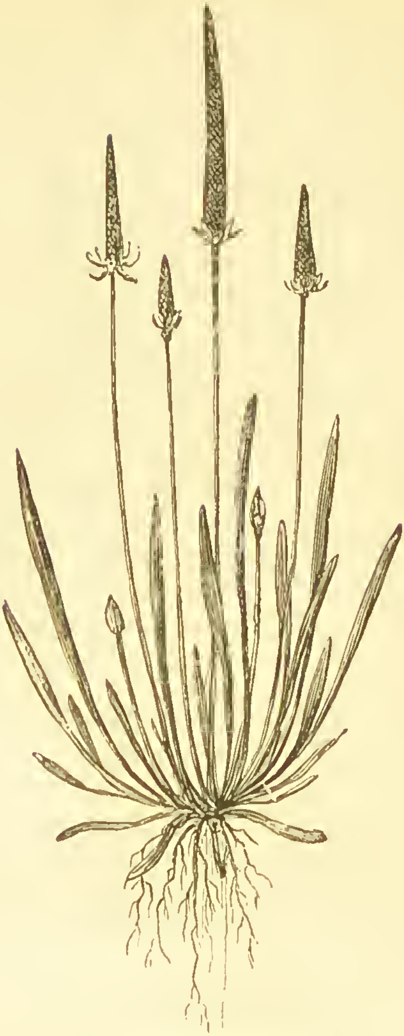
12. *R. arvensis* (Corn Crowfoot).—*Calyx* spreading; *carpels* large and prickly.—Corn-fields. Well distinguished by its deeply-cut smooth foliage, as well as by its prickly carpels. One of the most poisonous of the genus; yet its seeds are said to be the favourite food of partridges.—Fl. June. Annual.

13. *R. parviflórus* (Small-flowered Crowfoot).—*Stem* prostrate, hairy; *seeds* covered with small hooked prickles.—Fields and waste places, not common. Well distinguished by its hairiness, prostrate mode of growth, and inconspicuous flowers which grow opposite the leaves.—Fl. May—August. Annual.

* Most of the plants in this genus are acrid, and are said to be injurious to cattle if mixed largely with their food. *R. Flámmula* and *sceleratus* are used in the Hebrides to raise blisters; these are, however, of objectionable use, being likely to produce sores difficult to heal. *R. aquátilis* is by some botanists separated into several species. Another species, *R. alpestris*, which grows on the Clova mountains, has divided leaves and white flowers.

6. MYOSÚRUS (*Mouse-tail*).

1. *M. mínimus* (Common Mouse-tail).—A small annual plant, 3—6 inches high, growing in gravelly or chalky cornfields in many parts of England, easily distinguished from every other British plant by the arrangement of its ripe carpels into the appearance of a mouse's tail.—Fl. May. Annual.

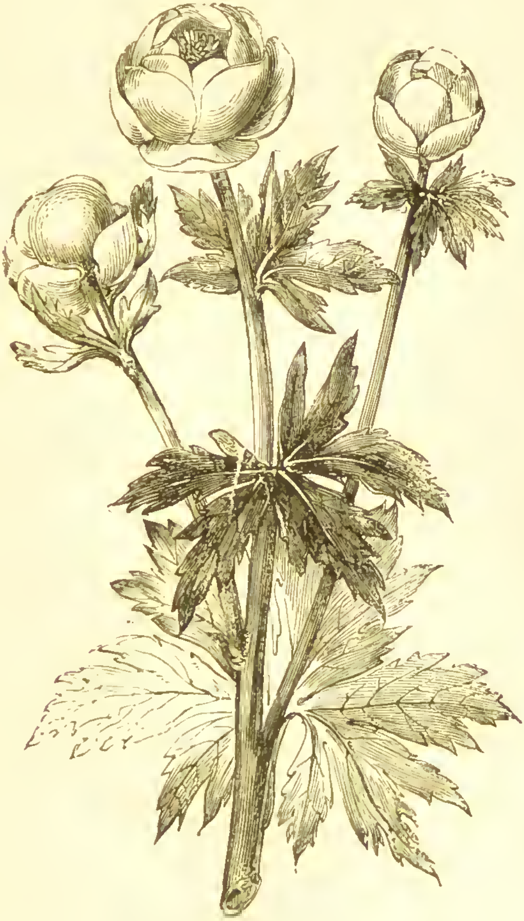


MYOSÚRUS (*Mouse-tail*).

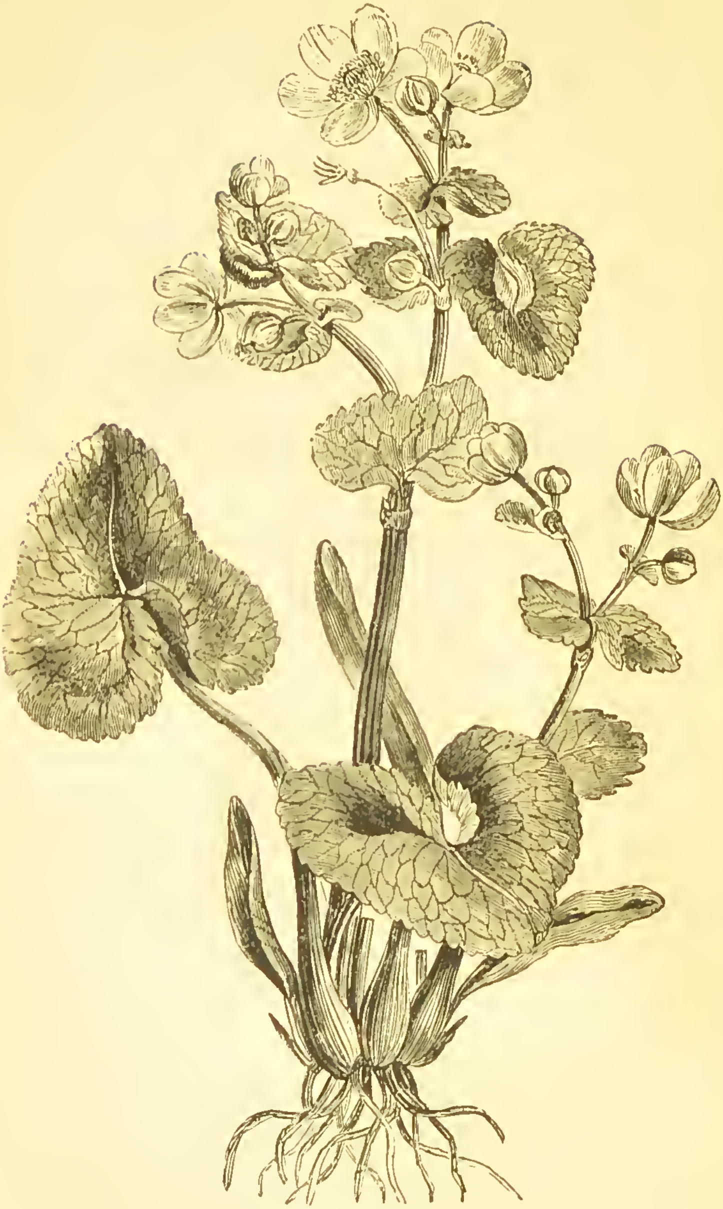
7. Trollius (*Globe Flower*).

1. *Europæus* (Mountain Globe Flower).—A large and handsome plant, common in gardens, and growing wild in the mountainous parts of Scotland, Wales, and the north of England. The flowers are composed of

about fifteen concave sepals, which converge into the form of a globe; the petals are shorter and narrower than the sepals, and also curve inwards. By some botanists the sepals are called petals, and the petals nectaries.—Fl. June, July. Perennial.



TROLLIUS (*Globe Flower*).



CALTHA (*Marsh Marigold*).

8. CALTHA (Marsh Marigold).

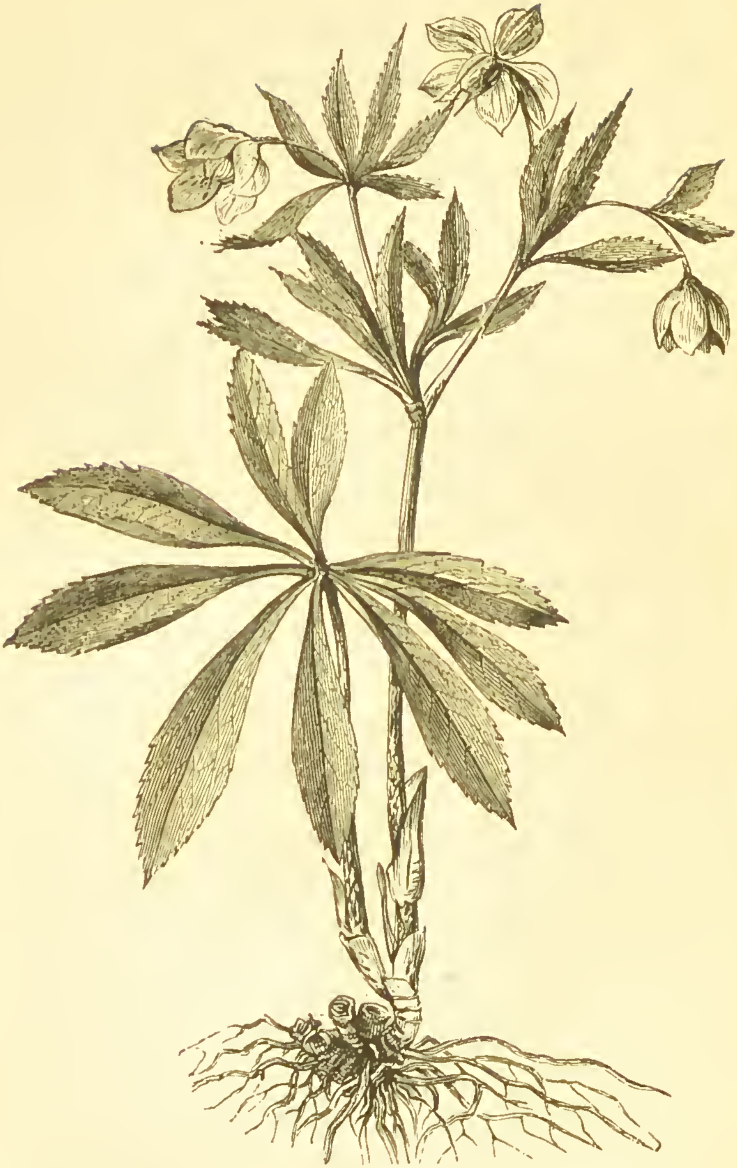
1. *C. palustris* (Common Marsh Marigold).—A showy plant, resembling a gigantic Buttercup, abundant in marshes, and by the sides of streams. *Leaves* kidney-shaped, large and glossy. A double variety is common in gardens.

9. HELLÉBORUS (Hellebore).

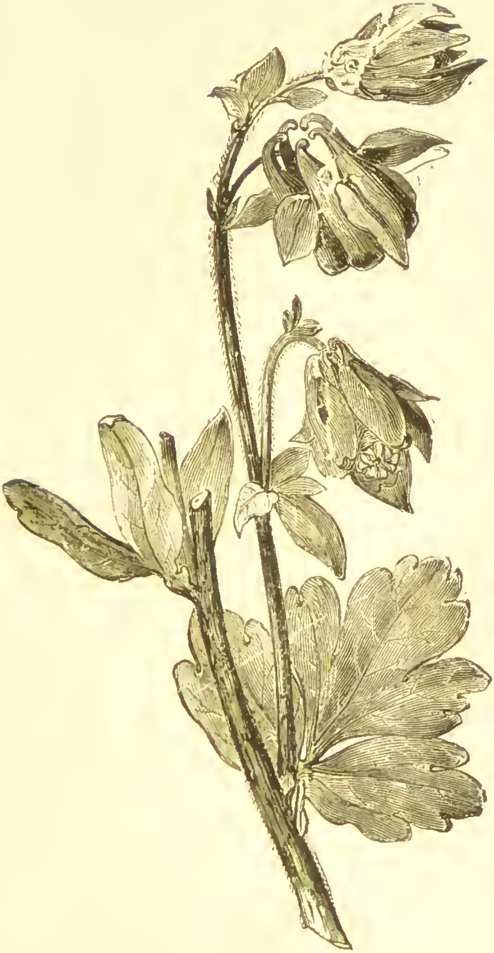
1. *H. víridis* (Green Hellebore).—*Leaves* digitate; *sepals* spreading.—A coarse herbaceous plant, remarkable for the light green hue of its flowers. The *petals*, or as some botanists call them, the nectaries, of this plant, as well as of the following, are tubular, shorter than the calyx, and contain honey, which is said, and perhaps with reason, to be poisonous.—Fl. March, April. Perennial.

2. *H. fœtidus* (Stinking Hellebore).—*Leaves* pedate; *sepals* converging.—Best distinguished from the preceding by its evergreen leaves which are not divided to a common centre, and by the purple hue of its sepals. Both species are considered doubtful natives, being generally found in the vicinity of houses.—Fl. March, April. Perennial.

* These two species are remarkable for their green leaf-like petals, and for the large tubular nectaries, in which small flies may sometimes be found caught, as in a trap. *H. niger* is a handsome species, with large white flowers, tinged with rose-colour, which are best known by the name of Christmas Rose. This is by some supposed to be the Hellebore of the ancients, so famous as a specific for madness; but most probably it was that now called *H. officinális*. Closely allied with this genus is the common garden flower *Eránthis hyemális* (Winter Aconite), a pretty little plant, with yellow flowers and glossy leaves, appearing very early in spring.



HELLÉBORUS VÍRIDIS (*Green Hellebore*).



AQUILÉGIA (*Columbine*)

10. AQUILÉGIA (*Columbine*).

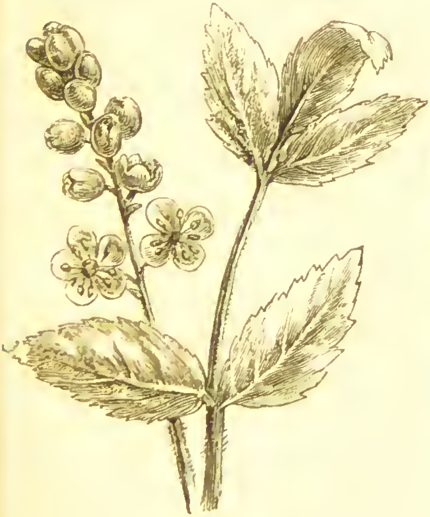
1. *A. vulgáris* (Common Columbine).—The only British species, common in gardens, to which it is in spring very ornamental, with its delicate, folded leaves; and no less so in summer, with its curiously shaped flowers, which are of various colours. When growing wild, its flowers are usually blue or white. It may be distinguished from all other British flowers by having each of its five petals terminated in an incurved horn-like spur. It derives its name, Columbine, from the fancied resemblance of its flowers to a nest of doves, *columba* being Latin for a dove.—Fl. June, July. Perennial.

11. DELPHÍNIUM (*Larkspur*).

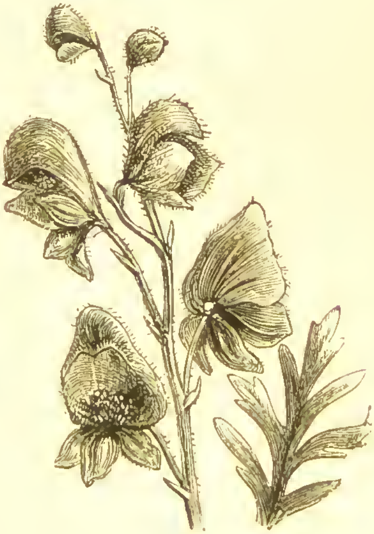
1. *D. Consólida* (Field Larkspur).—A doubtful native, though often found in considerable quantities in sandy or chalky corn-fields. It closely resembles some of the species commonly cultivated in gardens.—Fl. June, July. Annual.

12. ACONÍTUM (*Monk's Hood*).

1. *A. Napellus* (Common Monk's-hood, or Wolf's-bane).—A common garden plant, more remarkable for the curious structure of its tubular nectaries, which are concealed under the hooded upper petal, than for beauty, or any other desirable qualities. Children often amuse themselves by pulling off the hood, and exposing the nectaries, when the remainder of the flower bears a fanciful resemblance to a car drawn by doves. The whole plant (especially the root) is very poisonous, and derives its name of Wolf's-bane from being used, in conjunction with more attractive food, as a bait in wolf-traps. It is scarcely to be considered a native of Britain.—Fl. June, July. Perennial.



ACTÆA (*Bane-berry*).

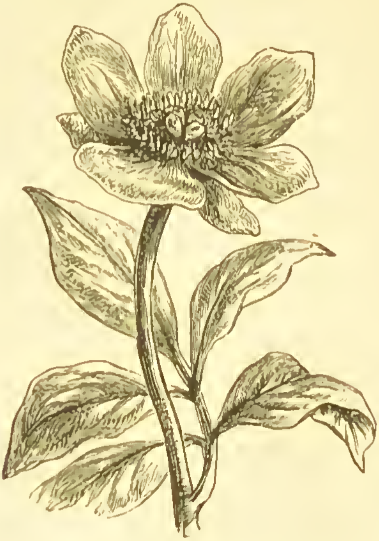


ACONÍTUM (*Monk's-hood*).

13. ÁCTÆA (*Bane-berry*).

1. *A. spicata* (Bane-berry, or Herb Christopher).—The only British species, well distinguished by the

generic characters given above, and by its triangular stem; it is a local plant, having been found only in Yorkshire.—Fl. May. Perennial.

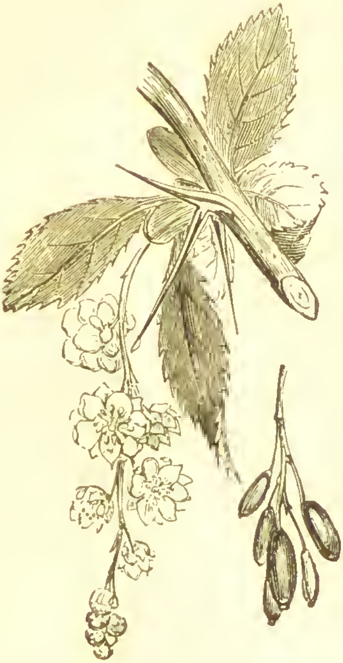


14. Pæonia (*Peony*).

1. *P. corallína* (Entire-leaved Peony).—Scarcely admissible into the British Flora, as it grows only on an island called the Steep Holmes, in the Severn, into which it was probably introduced. It is one of the herbaceous species cultivated in gardens.—Fl. May, June. Perennial.

Ord. II.—BERBERIDACEÆ.—The Barberry Tribe.

Sepals 3, 4, or 6, in a double row, often coloured, soon falling off, surrounded externally by petal-like scales; *petals* either equal in number to the sepals, and opposite to them, or twice as many, often with a gland at the base; *stamens* equal in number to the petals, and opposite to them; *anthers* opening by a valve from the base upwards; *ovary* solitary, 1-celled, 1—3-seeded, generally turning to a berry.—Shrubs, growing principally in mountainous parts of the temperate zones, especially in the north of India. Several species have thorny stems and astringent bark, and furnish a yellow dye; the berries are acid, and may be made into an agreeable preserve; those of one species, *Bérberis Asiática*, are dried in the sun like raisins. Several handsome species are cultivated in gardens, under the name of *Mahónia.*



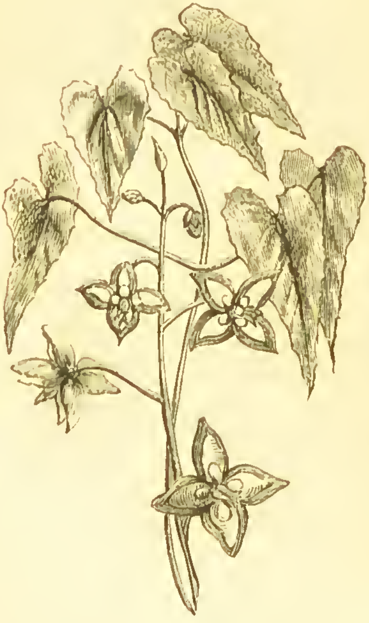
BÉRBERIS (*Barberry*).

1. BÉRBERIS (Barberry).—*Sepals* 6; *petals* 6, with 2 glands at the base of each within; *berry* 2-seeded. (Name said to be of Arabic origin.)

2. EPIMÉDIUM (Barrenwort).—*Sepals* 4; *petals* 4, with a scale at the base of each within; *pod* many-seeded. (Name of uncertain origin.)

1. BÉRBERIS (*Barberry*).

1. *B. vulgáris* (Common Barberry).—The only British species. A pretty shrub, not uncommon in woods and hedges; remarkable for the light colour of its bark, which is yellow within, and for its 3-forked spines. The flowers are yellow, and grow in drooping clusters; the *filaments* are elastic and irritable, so that when touched ever so lightly by the legs of an insect, or by any other small body, they spring forward and close on the pistil; after some time, they slowly recover their original position. The berries are oblong, red when ripe, and gratefully acid. The shrub is often rooted out by farmers, on account of an erroneous opinion that it is liable to produce rust in wheat.—Fl. June. Shrub.



2. EPIMÉDIUM (*Barrenwort*).

1. *E. alpínum* (Alpine Barrenwort).—The only species found in Britain; occurring here and there in mountainous woods in some parts of Scotland and the north of England, but not considered to be indigenous.

Each *stem* bears a single leaf, which is composed of 3 ternate delicate leaflets.—Fl. May. Perennial.

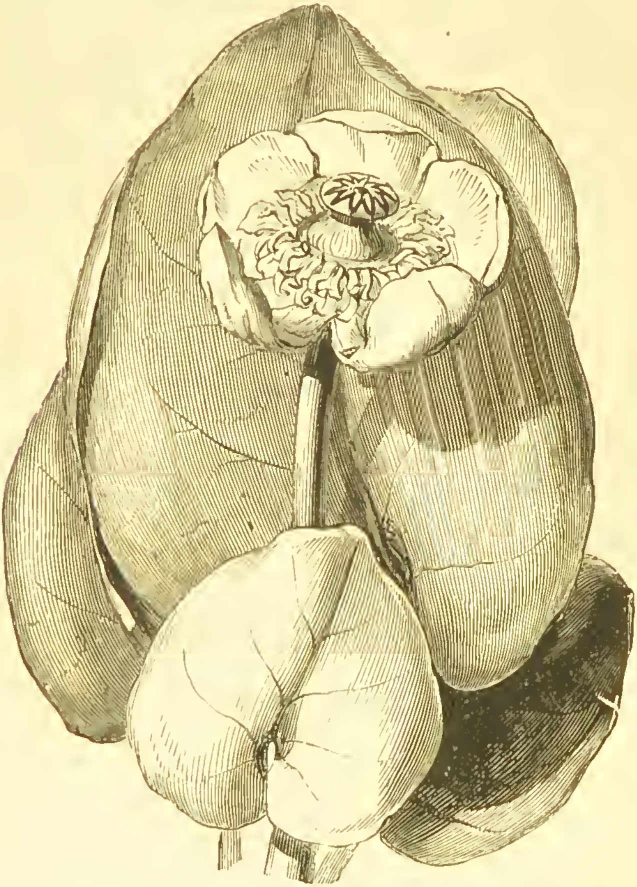
ORD. III.—NYMPHÆACEÆ.—WATER LILY TRIBE.

Sepals 4—6, gradually passing into *petals*, and these into *stamens*, all being inserted on a fleshy disk, which surrounds the ovary; *stigma* sessile, rayed; *berry* many-celled, many-seeded.—Herbaceous aquatic plants, with peltate, floating leaves, and large, often fragrant, flowers. The roots of some species are roasted and eaten: the seeds contain a considerable quantity of starch, and in seasons of scarcity are used as food. The East Indian *Nelumbium speciosum* is said to have been the sacred bean of Pythagoras. Its curious seed-vessels, filled with vegetating seeds, are thought to have originated the cornucopia of the ancients. One plant of this order, *Victoria regális*, the largest and most beautiful of aquatic plants, produces blossoms 15 inches, and leaves 6 feet, in diameter. The seeds are eatable, and are called in South America, Water Maize.

NYMPHÆA ALBA (*White Water Lily*).

1. Nymphæa (Water Lily).—*Sepals* 4; *petals* inserted on a fleshy disk. (Name from its growing in places which the nymphs were supposed to haunt.)

2. Nuphar (Yellow Water Lily).—*Sepals* 5; *petals* inserted on the receptacle. (Name of Greek origin.)



NUPHAR LÚTEA (*Common Yellow Water Lily*).

1. Nymphæa (*Water Lily*).

1. *N. alba* (White Water Lily).—The only British species, and, perhaps, the most magnificent of our native flowers, inhabiting clear pools and slow rivers. The

flowers rise above the water under the influence of light, and expand only during sunshine, in the middle of the day. Towards evening they close and sink beneath the surface.—Fl. July. Perennial.

2. Nuphar (*Yellow Water Lily*).

1. *N. lútea* (Common Yellow Water Lily).—*Stigma* with 14—20 rays, which do not extend to the margin. —Rivers and ditches, frequent. Much smaller than the last in all its parts. *Flower* yellow, and nearly globose, smelling like brandy, whence, in Norfolk, and other parts of England, it is called Brandy-bottle. The Turks prepare a cooling drink from the flowers, which they call *Pufer* (a corruption of the ancient name *Nouphar*). —Fl. July. Perennial.

2. *N. púmila* (Least Yellow Water Lily).—*Stigma* of 8—10 rays, which extend beyond the margin.—Much smaller than the preceding, from which it differs principally in the toothed edge of the stigma. It grows in several of the small Highland lakes.—Fl. July, August. Perennial.

Ord. IV.—PAPAVERACEÆ.—The Poppy Tribe.

Sepals 2, soon falling off; *petals* 4; *ovary* 1; *stigma* rayed, or lobed; *capsule* 1-celled, many-seeded; *seeds*

Ovary of the Poppy.

inserted on incomplete partitions, which radiate from the sides of the capsule, but do not meet at the centre.—Herbaceous plants, abounding in a milky juice, which is narcotic, and, under the names of Opium, Laudanum, and Morphia, ranks among the most valuable of medicines. That produced by *Papáver somníferum* is alone used. The seeds of all contain a considerable quantity of oil, which is mild and wholesome.

1. PAPÁVER (Poppy).—*Stigma* sessile, rayed; *capsule* opening by pores beneath the stigma. ("Named, because it is administered with *pap* (*papa* in Celtic) to induce sleep."—*Sir W. J. Hooker.*)

2. MECONOPSIS (Welsh Poppy).—*Style* short; *stigma* of few rays; *capsule* opening by pores beneath the top. (Name in Greek signifying, *bearing resemblance to a Poppy.*)

3. GLAUCIUM (Horn Poppy).—*Stigma* 2-lobed; *capsule* pod-like, 2-celled, 2-valved. (Name from the *glaucous* hue of the foliage.)

4. CHELIDÓNIUM (Celandine).—*Stigma* 2-lobed; *capsule* pod-like, 1-celled, 2-valved; *seeds* crested. (Named from *chelídon*, a swallow, because, as Pliny tells us, that bird discovered that its juice was efficacious in restoring sight to its young when blinded.)

1. PAPÁVER (*Poppy*).

* *Capsules bristly.*

1. *P. Argemóne* (Long Rough-headed Poppy).—*Capsule* club-shaped; *bristles* erect; *leaves* twice pinnatifid. —A small species, with light scarlet petals, black at the base, occurring sparingly in corn-fields. (The name Argemóne, from *argos*, slothful, was formerly given to Poppies, from their narcotic effects.)—Fl. June, July. Annual.

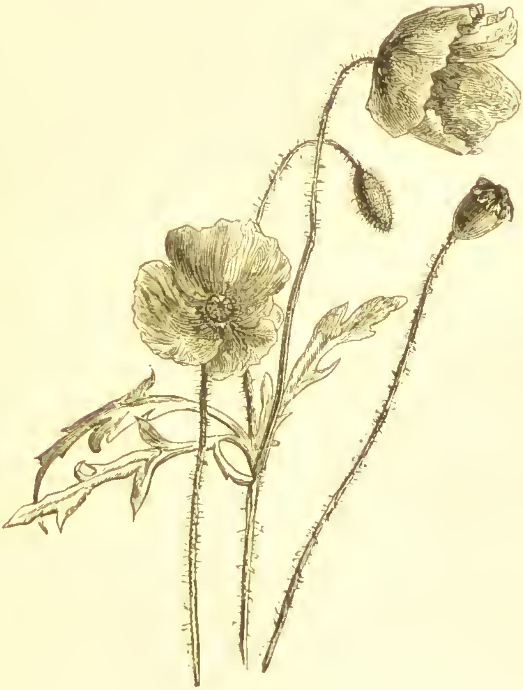
2. *P. hýbridum* (Round Rough-headed Poppy).—*Capsule* nearly globular; *bristles* spreading; *leaves* twice pinnatifid.—In corn-fields, but not common. *Flowers* deep scarlet.—Fl. June, July. Annual.

** *Capsules smooth.*

3. *P. dubium* (Long Smooth-headed Poppy).—*Capsule* oblong; *bristles* on the flower-stalks close pressed;

leaves twice pinnatifid.—In cultivated fields. *Flowers* scarlet.—Fl. June, July. Annual.

4. *P. Rhœas* (Common Red Poppy).—*Capsules* nearly globular; *bristles* spreading; *leaves* pinnatifid, cut.—The common Poppy of corn-fields. *Flowers* scarlet, often black at the base.—Fl. June, July. Annual.



PAPAVER RHŒAS (*Common Red Poppy*).

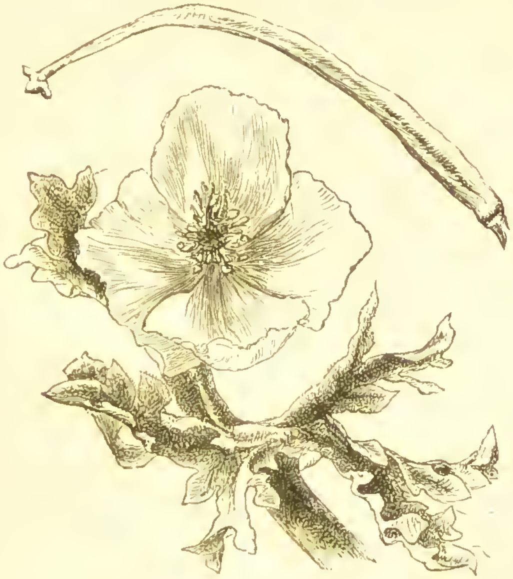
5. *P. somníferum* (Opium Poppy).—*Capsule* nearly globular; *whole plant* smooth and glaucous.—Common in gardens, and sometimes found apparently wild in waste ground; but its native country is unknown. Opium is procured by puncturing the unripe capsules

of this plant, and collecting the juice, which exudes and hardens. The seeds are destitute of narcotic properties, and afford a wholesome oil, which is said to be much used in adulterating olive oil. *Flowers* usually white, with a purple stain at the base of the petals ; but the colours of garden varieties are endless.—Fl. July, August. Annual.

2. MECONOPSIS (*Welsh Poppy*).

1. *M. Cámbrica* (Yellow Welsh Poppy).—The only British species, easily distinguished from any of the fore-

going by its golden yellow flowers, and juice of the same colour; and from the Horned Poppy, by its slender growth, and green, not glaucous foliage.—Rocky places in Wales, Devonshire, Westmoreland, &c.—Fl. June, July. Perennial.



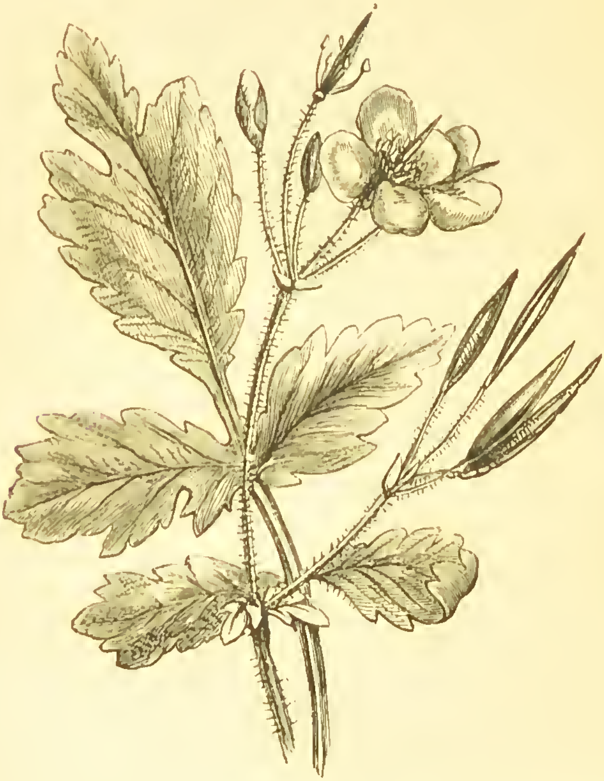
3. Glaucium (*Horned Poppy*).

1. *G. lúteum* (Yellow Horned Poppy).—*Pod* roughish; *leaves* embracing the stem, wavy, very rough and glaucous. A handsome plant, conspicuous on the sandy seashore with its hoary foliage, and large yellow flowers. The *pods* are cylindrical, 6—10 inches long, and might at first sight be mistaken for flower-stems bare of leaves; *juice* yellow.—Fl. June—August. Biennial.

* Two other species have been found in England, *M. phœníceum*, and *M. violáceum*, called by Hooker and Arnott *Rœméria hýbrida;* but they are not considered to be indigenous.

4. Chelidónium (*Celandine*).

1. *C. majus* (Common or Greater Celandine).—The only British species; not uncommon in waste places and among ruins, bearing its yellow flowers, which are much smaller than those of any others of the Poppy tribe, in stalked *umbels;* the *leaves* are irregularly pinnate, slightly hairy, and abound, as well as the rest of the plant, in an



CHELIDÓNIUM MAJUS (*Common Celandine*).

orange-coloured juice, which is a violent acrid poison. It is a popular remedy for warts, and has been employed successfully in removing films from the cornea of the eye ; a property which, Pliny tells us, was discovered by swallows ; and hence it derived its name from *chelídon*, a swallow. According to the same author, it comes into flower at the time when those birds arrive, and fades at their departure.—Perennial.

* The Lesser Celandine is a species of Ranunculus, and bears little resemblance, either in appearance or properties, to the present plant.

Ord. V.—FUMARIACEÆ.—The Fumitory Tribe.

Sepals 2, deciduous ; *petals* 4, irregular, and more or less united and swollen, or spurred at the base ; *stamens* 6, in two sets ; *ovary* 1-celled ; *style* thread-like ; *stigma* lobed ; *seed-vessel* 1-or 2-seeded ; *seeds* shining, crested. —Herbaceous plants, with brittle stems, and watery juice, growing mostly in temperate climates. Closely allied to the Poppies, from which they may well be distinguished by their irregular corollas, and watery (not milky) juice.

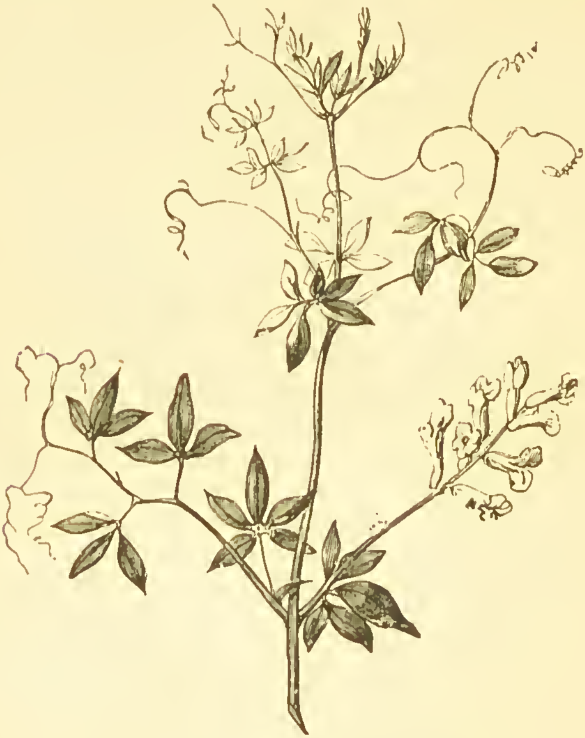
1. Corýdalis.—*Petals* 4, of which one is spurred at the base ; *seed-vessel* many-seeded. (Name, the Greek name of *Fumitory*.)

2. Fumária (Fumitory).—*Petals* 4, of which one is swollen at the base ; *seed-vessel* 1-seeded. (Name from *fumus*, smoke ; the smoke of this plant being said by the ancient exorcists to have the power of expelling evil spirits.)

1. Corýdalis.

1. *C. claviculata* (Climbing Corydalis).—*Stem* climbing ; *leaves* pinnate, ending in branched tendrils.—Bushy places, in many parts of Great Britain. A long and slender plant, with delicate green stems and foliage, rising to the height of several feet, by the help of the bushes among which it grows. *Flowers* in small clusters, yellowish white.—Fl. June—August. Annual.

* Two other species are naturalized in Britain; *C. sólida,* distinguished by its unbranched stem and purple flowers, and *C. lútea,* not uncommon on old walls; it is, like the last, destitute of tendrils, and bears bright yellow flowers.

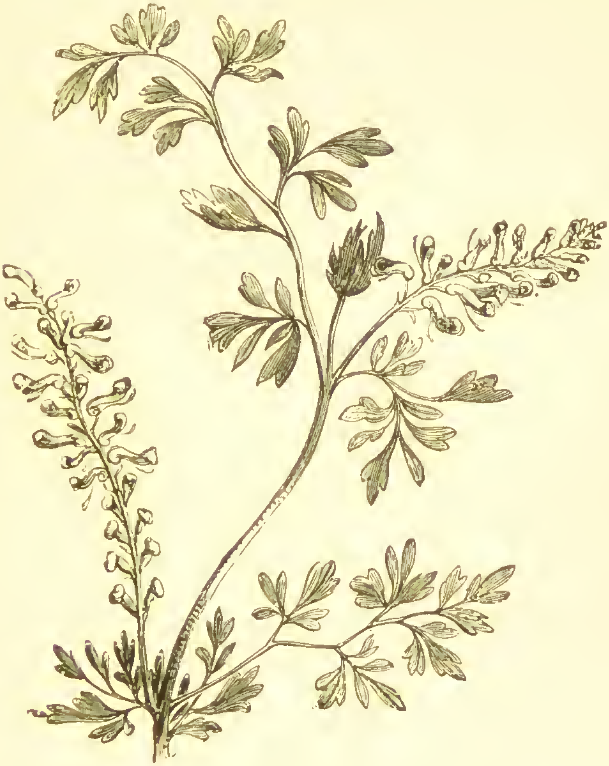


CORYDALIS CLAVICULATA (*Climbing Corydalis*).

2. FUMÁRIA (*Fumitory*).

1. *F. capreoláta* (Ramping Fumitory).—*Sepals* as broad as the corolla, and half as long; *fruit* globose, notched.—Hedges and corn-fields, common. Plant generally climbing by the help of its twisted leaf-stalks. *Foliage* of a delicate green; *flowers* pale pink, or cream-coloured, tipped with purple.—Fl. May—August. Annual.

2. *F. officinális* (Common Fumitory).—*Sepals* narrower than the corolla; *fruit* nearly globose, terminating abruptly.—In fields and waste places, common. Distinguished from the last by its smaller sepals and petals, which are rose-coloured, tipped with purple; it generally grows erect.—Fl. nearly all the year round. Annual.



FUMÁRIA OFFICINÁLIS (*Common Fumitory*).

* Several smaller varieties of Fumitory are not unfrequently met with, which some botanists consider distinct species, and name as such. In these the fruit is more or less pointed; and there are other minute differences which cannot be detected without accurate

examination. They are described by Hooker and Arnott, under the names of *F. parviflora, Vaillantii* and *micrantha.*

ORD. VI.—CRUCIFERÆ.—THE CRUCIFEROUS TRIBE.

A very large and important Order, well described by the name *cruciferous*, or cruciform, there being invariably 4 *petals*, which are placed cross-wise; *stamens* 6, of which two opposite ones are shorter than the rest; *seed-vessel* either a long pod, a *silique*, composed of two valves and a central partition, or a shorter pod, called a *silicle*, or pouch, which is for the most part, but not always, similarly constructed. At the base of the stamens are generally two green glands, which secrete honey. Most of the plants in this Order possess, in their wild state, stimulant properties and an acrid flavour; in medicine they afford a valuable remedy for the scurvy. Under cultivation, many of them assume a succulent habit of growth, and hold the first rank among esculent vegetables. The various kinds of cabbage, kale, brocoli, turnip, radish, and cress are the most remarkable examples. They contain a great deal f nitrogen gas, to the presence of which is to be

CRUCIFORM FLOWER.

attributed their unpleasant odour when rotting. Some contain a large portion of sulphur. Oil is contained in the seeds of many, in such quantities as to be a valuable article of commerce. There are about 800 species, one-eighth of which only are found in America; the remainder, for the most part, inhabit the cold and temperate regions of Europe and Asia. Upwards of 200 grow in the frigid zone, where they form a large proportion of the vegetation.

This Order contains all the plants which were placed by Linnæus in the Class Tetradynamia; that is, all such as are distinguished by having 6 stamens, 4 long and 2 short. Modern botanists found the main distinctions of the genera on the position of the radicle or embryo root with relation to the cotyledons, or seed-lobes; but as this arrangement presents difficulties to the young student in botany, it is not considered advisable to adopt it here.

* *Seed-vessel, a pouch* (silicle) *or short pod.*

† *Pouch 2-valved, with a central vertical partition.*

1. Thlaspi (Penny Cress).—*Pouch* rounded, flat, notched; *valves* boat-shaped, winged at the back; *seeds* numerous. (Name from the Greek, *thlao*, to flatten.)

2. Capsella (Shepherd's Purse).—*Pouch* inversely heart-shaped, flat; *valves* boat-shaped, keeled, but not winged; *seeds* numerous. (Name, a little *capsa*, or seed-case.)

3. Hutchinsia.—*Pouch* elliptical, entire; *valves* boat shaped, keeled, not winged; *cells* 2-seeded. (Named in honour of *Miss Hutchins*, of Bantry, Ireland, an eminent botanist.)

4. Teesdalia.—*Pouch* roundish, notched; *valves* boat-shaped, keeled; *cells* 2-seeded; *stamens* having a little scale at the base of each, within. (Named in honour of *Mr. Teesdale*, a Yorkshire botanist.)

5. Lepídium (Pepper-wort).—*Pouch* roundish; *valves*

keeled; *cells* 1-seeded; *petals* equal. (Name from the Greek *lepis*, a scale, from the shape of the pouches.)

6. COCHLEARIA (Scurvy Grass).—*Pouch* globose, or nearly so; *valves* not flattened, 1-nerved; *seeds* numerous. (Name from *cochlear*, a spoon, from the shape of the leaves.)

7. ARMORÁCIA (Horse Radish).—*Pouch* globose, or nearly so; *valves* not flattened, nerveless; *seeds* numerous. (Name from *Armorica*, Brittany, where it is abundant.)

8. SUBULARIA (Awl-wort). — *Pouch* oval; *valves* flattened, boat-shaped; seeds numerous. (Name from *súbula*, an awl, from the shape of the leaves.)

9. DRABA (Whitlow Grass).—*Pouch* oval, or oblong; *valves* slightly convex; *seeds* many, in two rows. (Name from the Greek *drabé*, acrid.)

†† *Pouch without a central vertical partition.*

10. CAKÍLÉ (Sea Rocket).—*Pouch* angular, with a horizontal joint; *lower division* containing a pendent seed, the *upper* an erect seed, and soon falling off. (Name of Arabic origin.)

11. CRAMBÉ (Sea Kale).—*Pouch* 2-jointed; *upper cell* containing one pendent seed, which is supported on a stalk springing from the base of the cell; *lower joint* seedless. (Name from the Greek *crambé*, cabbage.)

12. SENEBIÉRA (Wart Cress).—*Pouch* 2-lobed, rough, not bursting; *cells* 1-seeded. (Name in honour of *M. Senebier*, an eminent Genevese naturalist.)

** *Seed-vessel, a* silique *or long pod.*

† *Pod opening by two valves.*

13. DENTARIA (Coral-root).—*Pod* narrow, pointed; *valves* flat, nerveless; *seeds* in a single row, on broad stalks. (Name *dens*, a tooth, from the teeth-like division of the root.)

14. CARDAMÍNÉ (Bitter Cress).—*Pod* linear; *valves* flat, nerveless, separating with an elastic spring; *seeds*

in a single row, on thread-like stalks. (Name from the Greek *cardia*, the heart, and *damao*, to fortify, from its supposed strengthening properties.)

15. Árabis (Rock Cress).—*Pod* linear; *valves* flat, obtuse, with one nerve or several veins; *stigma* nearly sessile; *seeds* in a single row. (Name from being originally an *Arabian* genus.)

16. Turrítis (Tower Mustard).—*Pod* linear, 2-edged; *valves* prominently nerved; *seeds* in two rows. (Name from *turris*, a tower, either from its towering form, or its usual place of growth.)

17. Barbaréa (Winter Cress).—*Pod* linear, 4-angled; *valves* with prominent nerve; *seeds* in a single row; *calyx* erect. (Name from *St. Barbara*, to whom it was anciently dedicated.)

18. Nasturtium (Cress).—*Pod* nearly cylindrical, short; *valves* convex, nerveless; *seeds* irregularly placed in two rows; *calyx* spreading. (Name from *nasus tortus*, a distorted nose, on account of the pungent properties of the plant.)

19. Sisymbrium (Hedge Mustard).—*Pod* rounded, or angular; *valves* convex, with three (or rarely one) nerves; *stigma* entire; *seeds* in a single row, not striated; seed stalks slender. (Name, the Greek name of the plant.)

20. Alliária (Garlic Mustard).—*Pod* long, linear, rounded; *valves* slightly 3-nerved; *seeds* striated; seed-stalks flat. (Name from the Latin *allium*, garlic.)

21. Erýsimum (Treacle Mustard).—*Pod* 4-sided; *valves* keeled; *stigma* obtuse, entire, or notched; *seeds* in a single row, smooth, not margined. (Name from the Greek *eruo*, to cure, on account of the supposed virtues of the plant.)

22. Cheíranthus (Wall Flower).—*Pod* flattened; *valves* with a prominent nerve; *stigma* of two spreading lobes; *calyx* erect, two opposite sepals bulging at the base. (Name of Arabic origin.)

23. Matthíola (Stock).—*Pod* cylindrical, or flattened; *stigma* of two converging lobes; *seeds* generally with a membranous border. (Named in honour of *Dr. Matthiolus*, an Italian botanist.)

24. Brássica (Cabbage).—*Pod* nearly cylindrical, beaked; *valves* 1-nerved; *seeds* globose, in a single row; *calyx* erect. (Named from the Celtic *Bresic*, a cabbage.)

25. Sinápis (Mustard).—*Pod* nearly cylindrical, tapering, beaked; *valves* with 3 or 5 (rarely one) nerves; *seeds* globose, in a single row; *calyx* spreading. (Name from the Greek *sinápi*, mustard.)

26. Diplotaxis (Rocket).—*Pod* flattened; *valves* 1-nerved; *seeds* oblong, in two rows; *calyx* spreading. (Name in Greek, denoting *two-rowed.*)

†† *Pod without valves.*

27. Ráphanus (Radish).—*Pod* swollen, imperfectly jointed, tapering; *seeds* globular; *calyx* spreading. (Name in Greek, denoting early appearance or quick growth.)

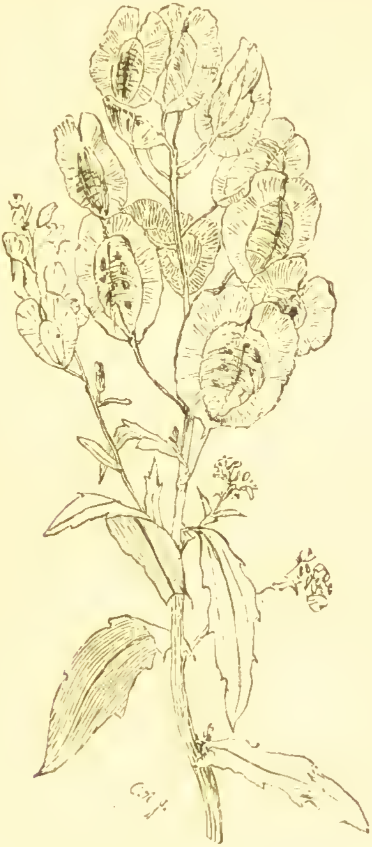
1. Thlaspi (*Penny Cress*).

1. *T. arvensé* (Mithridate Mustard, or Penny Cress). —*Pouch* round, flat, with very broad wings, and a deep notch; *seeds* striated; *leaves* oblong, arrow-shaped at the base, toothed, smooth.—In cultivated or waste ground, but not common. Penny cress derives its name from the resemblance which its seed-vessels in size and shape bear to silver pennies; its longer name it received from having been "formerly used in the Mithridate confection, an elaborate hodge-podge, now laid aside."—*Sir J. E. Smith.* The *flowers* are white, and very small in comparison with the pouches.—Fl. all the summer. Annual.

2. *T. perfoliatum* (Perfoliate Penny Cress).—*Pouch* inversely heart-shaped; *style* shorter than the notch of the pouch; *seeds* 3 to 4 in a cell, smooth; *stem-leaves* oblong, heart-shaped at the base.—Limestone pastures in Oxfordshire and Gloucestershire, but rare. *Flowers* white. Fl. April, May. Annual.

3. *T. alpestré* (Alpine Penny Cress).—*Pouch* inversely heart-shaped, abrupt; *style* longer than the

notch of the pouch; *seeds* numerous; *stem-leaves* arrow-shaped at the base; *stem* simple.—Mountainous limestone pastures in the north of England; rare.—Fl. June, July. Perennial.

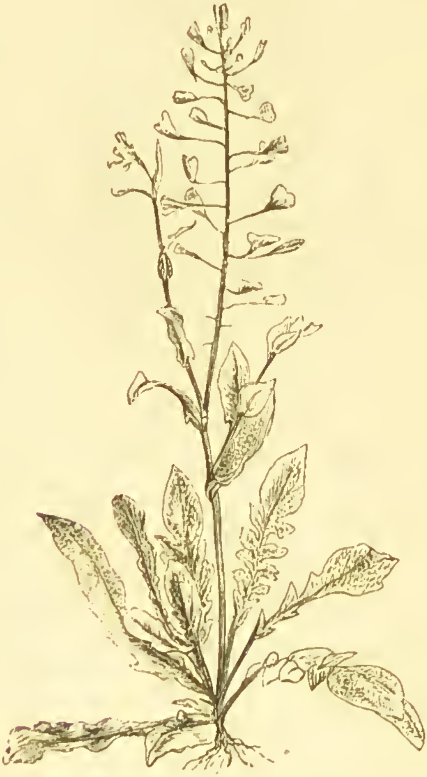


THLASPI ARVÉNSE (*Penny Cress*).

2. CAPSELLA (*Shepherd's Purse*).

1. *C. Bursa Pastóris* (Common Shepherd's Purse). The only species. A common weed, to be found

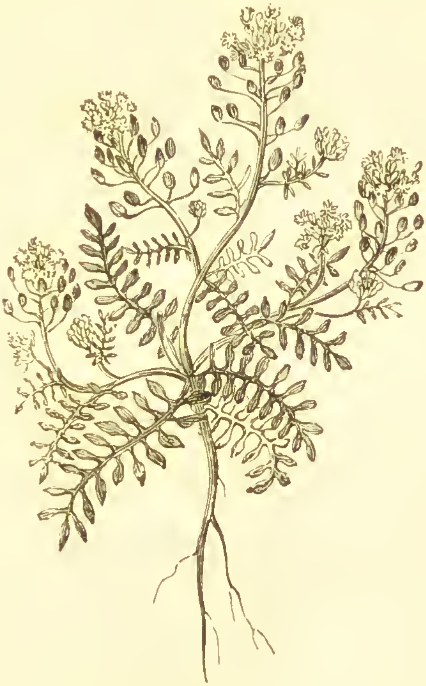
almost every part of the world, varying considerably in luxuriance, according to soil and situation. In stony ground it grows only a few inches high, but in rich soil it attains two feet. It was known to the ancients by the name of *Thlaspi*, but has recently been separated from that genus, on account of its wanting the characteristic winged valves. The whole plant is more or less rough with hairs; the root leaves are pinnatifid, those on the stem oblong, toothed, and arrow-shaped at the base.—Fl. nearly the whole year round. Annual.



CAPSELLA BURSA-PASTÓRIS (*Common Shepherd's Purse*).

3. HUTCHINSIA.

1. *H. petræa* (Rock Hutchinsia).—The only British species. A pretty little plant, from 2 to 4 inches high, growing on limestone rocks in several parts of England and Wales. The *leaves* are elegantly pinnate; the *petals* white, and scarcely longer than the calyx; the *seeds* two in each cell.—Fl. March, April. Annual.

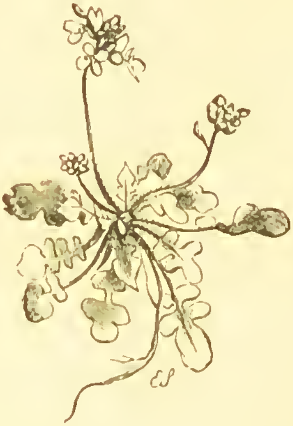


HUTCHINSIA PETRÆA (*Rock Hutchinsia*).

4. TEESDÁLIA.

1. *T. nudicaulis* (Naked-stalked Teesdalia).—The only British species. A minute and not an inelegant plant, bearing several stems, which terminate in small

corymbs of white *flowers,* with unequal petals, the central *stem* being always bare of leaves. The *leaves* are pinnatifid, and grow in a horizontal direction, closely pressed to the ground.—Dry banks; not common.—Fl. May. Annual.



TEESDÁLIA NUDICAULIS (*Naked-stalked Teesdalia*).

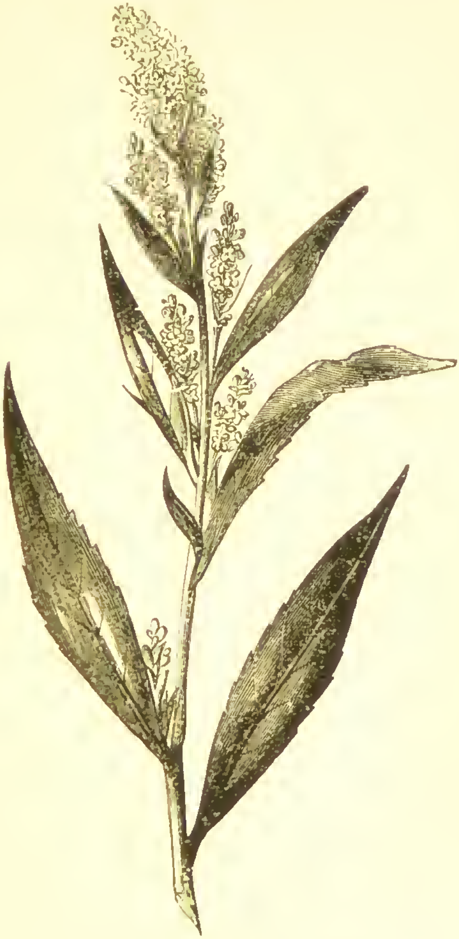
5. Lepídium (*Pepper-wort*).

1. *L. latifolium* (Broad-leaved Pepper-wort).—*Leaves* egg-shaped, pointed, simple, smooth; *pouch* oval, entire. —In salt marshes, and on the sea-coast; rare. The largest British species, remarkable for its dull glaucous hue. *Flowers* numerous, small, white, in leafy clusters. —Fl. July. Perennial.

2. *L. ruderálé* (Narrow-leaved Pepper-wort).—*Leaves* smooth, *lower ones* pinnatifid, toothed; *upper ones* linear, entire; *petals* wanting; *stamens* 2.—Waste places near the sea: smaller than the preceding.—Fl. June. Annual.

3. *L. campéstré* (Field Pepper-wort).—*Leaves* downy, *upper ones* arrow-shaped at the base; *pouch* rough with

minute scales; *style* scarcely longer than the notch.—Fl. July, August. Annual.



LEPIDIUM LATIFOLIUM (*Broad-leaved Pepper-wort*).

4. *L. Smithii* (Hairy Pepper-wort).—*Leaves* downy, *upper ones* arrow-shaped at the base; *pouch* not scaly; *style* much longer than the notch.—These last two are common hedge-plants, of erect growth, and downy habit,

made more conspicuous by their hoary foliage and numerous pouches, than by their minute white flowers. *L. campestre* is an annual, and sends up a single stem; *L. Smithii* is perennial, and sends up several stems, which are woody near the base. The latter is the less common of the two.—Fl. June—August. Perennial.

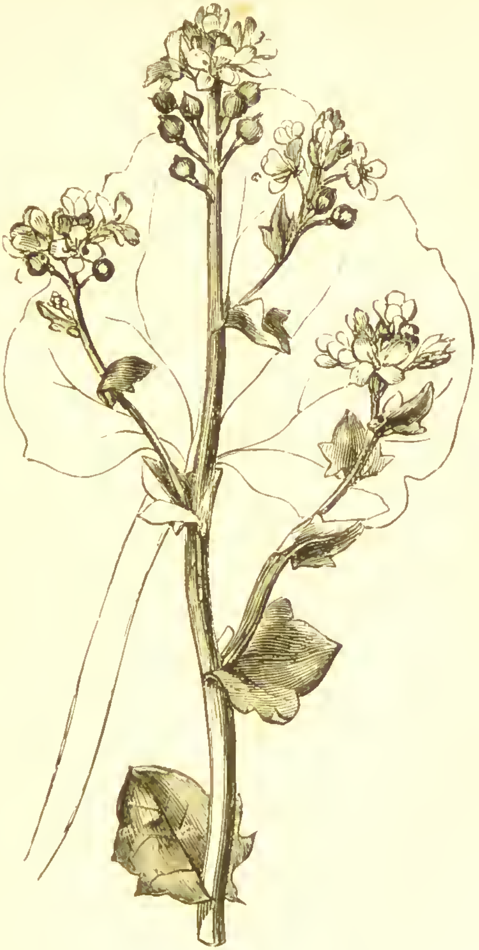
LEPÍDIUM CAMPESTRE (*Field Pepper-wort*).

6. COCHLEARIA (*Scurvy Grass*).

1. *C. officinális* (Common Scurvy Grass).—*Pouch* nearly globose; *root-leaves* between heart- and kidney-shaped, stalked; *stem-leaves* oblong, sessile, slightly lobed, toothed at the base, all fleshy.—On the muddy sea-shore, common. *Stem* often much branched; *flowers* in rather large corymbs, white. A smaller variety is common on the Highland mountains, which is made by some botanists a distinct species under the name of *C. Grœnlandica* (Greenland Scurvy Grass).—Fl. May. Annual.

2. *C. Ánglica* (English Scurvy Grass).—*Pouch* elliptical, veined; *root-leaves* oblong, entire, stalked; *stem-leaves* oblong, toothed at the base, sessile.—Sea-shores;

common. Slenderer than the last, with *leaves* more entire, and larger *pouches*.—Fl. May—Aug. Annual.

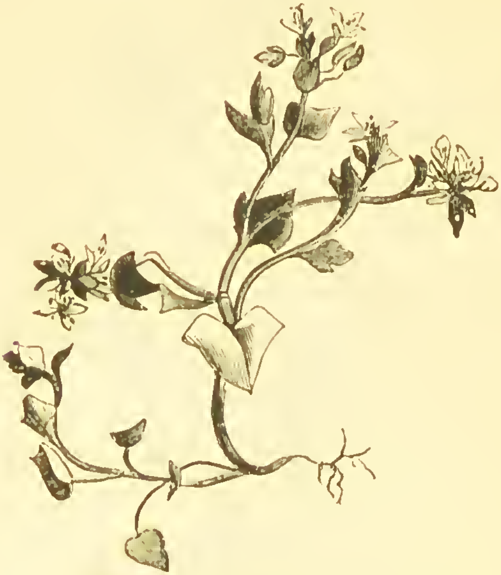


COCHLEARIA OFFICINÁLIS (*Common Scurvy Grass*).

3. *C. Dánica* (Danish Scurvy Grass).—*Pouch* ovate, veined; *leaves* all stalked, lobed and nearly triangular. —Cliffs and hedges near the sea, very common, much

smaller than either of the preceding. Fl. March—June. Annual.

* The plants of this genus derive their English name from the relief which they afford to persons suffering from scurvy, a disease to which sailors are particularly liable, in consequence of their being debarred from the use of fresh vegetables. Many other plants of the same tribe possess antiscorbutic properties to an equal degree; but these are particularly available from always growing near the sea. The use of lime-juice in the navy and merchant service has of late years rendered the attacks of this dreadful disease much less frequent than they used to be.



COCHLEÁRIA DÁNICA (*Danish Scurvy Grass*).

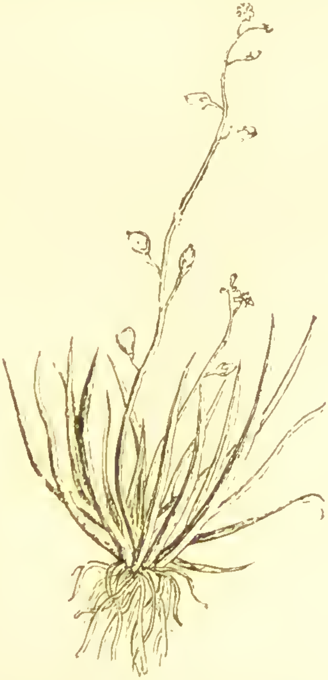
7. Armorácia (*Water Radish*).

1. *A. amphíbia* (Amphibious Yellow Cress, Great Water Radish).—*Leaves* pinnatifid or deeply serrated; *roots* stringy ; *petals* yellow, longer than the calyx.—A large plant, growing on the banks of rivers, remarkable for the number of long stringy *roots* which it sends out from the lower joints of the stem.—Fl. June—August. Perennial.

* Horse Radish, which is placed by some botanists in the genus *Cochleária,* is now referred to the present genus under the name of *Armorácia rusticána.* It can scarcely be considered a native.

8. SUBULÁRIA (*Awl-wort*).

1. *S. aquática* (Water Awl-wort).—The only species. —A small plant common on the banks of Alpine lakes.



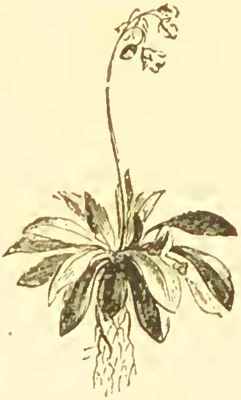
SUBULÁRIA AQUÁTICA (*Water Awl-wort*).

The roots are composed of long white fibres, the leaves all grow from the roots, and are awl-shaped. The *flowers* are small, and are sometimes perfected under water.—Fl. July. Annual.

9. DRABA (*Whitlow Grass*).

1. *D. verna* (Vernal Whitlow Grass).—*Flower-stalk* leafless; *petals* deeply cloven; *leaves* narrow-pointed, somewhat toothed, hairy.—A humble little plant with scanty foliage, and inconspicuous white flowers, but not without interest from its appearing very early in the year; common on walls and dry banks. A variety is found on Ben Lawers with inflated seed-vessels.—Fl. February—May. Annual.

2. *D. aïzoídes* (Yellow Alpine Whitlow-grass).—*Flower-stalk* leafless, smooth; *petals* notched, twice as long as the calyx; *style* much longer than the stamens; *leaves* narrow, pointed, rigid, glossy, keeled and fringed.—On rocks and walls at Pennard Castle near Swansea, where it forms dense tufts, conspicuous with bright yellow flowers.—Fl. March, April. Perennial.



DRABA VERNA (*Vernal Whitlow Grass*).

3. *D. incána* (Twisted Whitlow-grass).—*Stem-leaves* narrow, toothed, hoary; *petals* entire; *pouch* twisted.—

Mountainous rocks. Remarkable for the down on its leaves, which is forked in a star-like manner; Stems from 4 to 6 inches high, bearing white *flowers.*—Fl. June, July. Biennial.

4. *D. murális* (Speedwell-leaved Whitlow-grass).—*Stem* leafy, branched; *leaves* rough, egg-shaped, blunt, toothed, embracing the stem; *pedicels* spreading horizontally.—Limestone mountains, not common; growing from 6 to 12 inches high; *flowers* white.—Fl. May. Annual.

CAKÍLÉ MARÍTIMA (*Purple Sea Rocket*).

* Another species, *D. rupéstris* (Rock Whitlow-grass), grows on the summits of some of the Highland moun-

tains, but is very rare. It is found in the crevices of the rocks, and among moss, scarcely reaching two inches in height, and forming tufts of soft fringed *leaves* with several *flower-stems* from the same root.

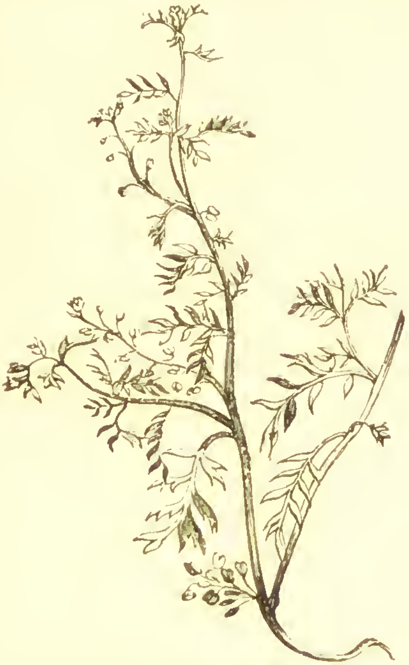
10. Cakílé (*Sea Rocket*).

1. *C. marítĭma* (Purple Sea Rocket).—The only British species. Common on the sandy sea-shore, where it grows in a bushy manner, with zig-zag branched *stems*, bearing fleshy, variously cut, glaucous *leaves*, and *corymbs* of lilac *flowers*. The *seed-vessels* are of very curious construction, each containing two *seeds*, of which the lower is erect, the upper pendent.—Fl. June—September. Annual.

CRAMBÉ MARÍTIMA (*Sea Kale*).

11. Crambé (*Sea Kale*).

1. *C. marítima* (Sea Kale).—This is the plant which is so well known in gardens as an esculent vegetable. The part which is eaten is the leaf-stalk blanched by being kept from the action of light.—It is found on various parts of the sea-coast, and differs in no respect from garden specimens as they appear when the forcing is over.—Fl. June. Perennial.

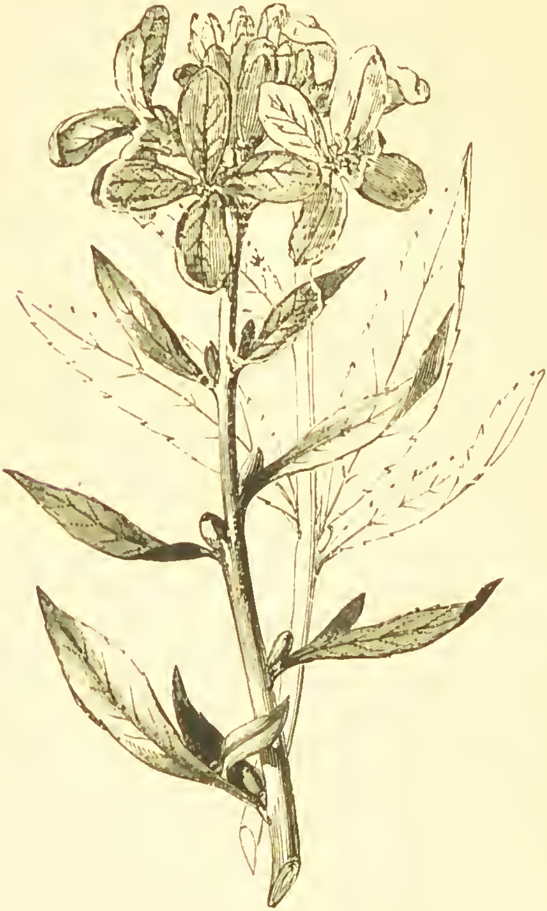


SENEBIÉRA CORÓNOPUS (*Lesser Wart Cress*).

12. Senebiéra (*Wart Cress*).

1. *S. Corónopus* (Water Cress, or Swine's Cress).—*Pouch* undivided, rough with little sharp points ; *style* prominent.—A common roadside weed, with trailing leafy

stems, and clusters of very small whitish flowers.—Fl. all the summer. Annual.



DENTÁRIA BULBÍFERA (*Bulbiferous Coral-root*).

2. *S. dídyma* (Lesser Wart Cress).—*Pouch* notched of two wrinkled lobes; *style* very short.—A common roadside weed in the South and West of England. It

differs from the last in having a more slender stem, and more finely cut leaves. It emits a very powerful smell, like that of Pepper-cress, especially when trodden on, or in hot weather; and is particularly nauseous to the taste.—Fl. all the Summer. Annual.

13. Dentária (*Coral-root*).

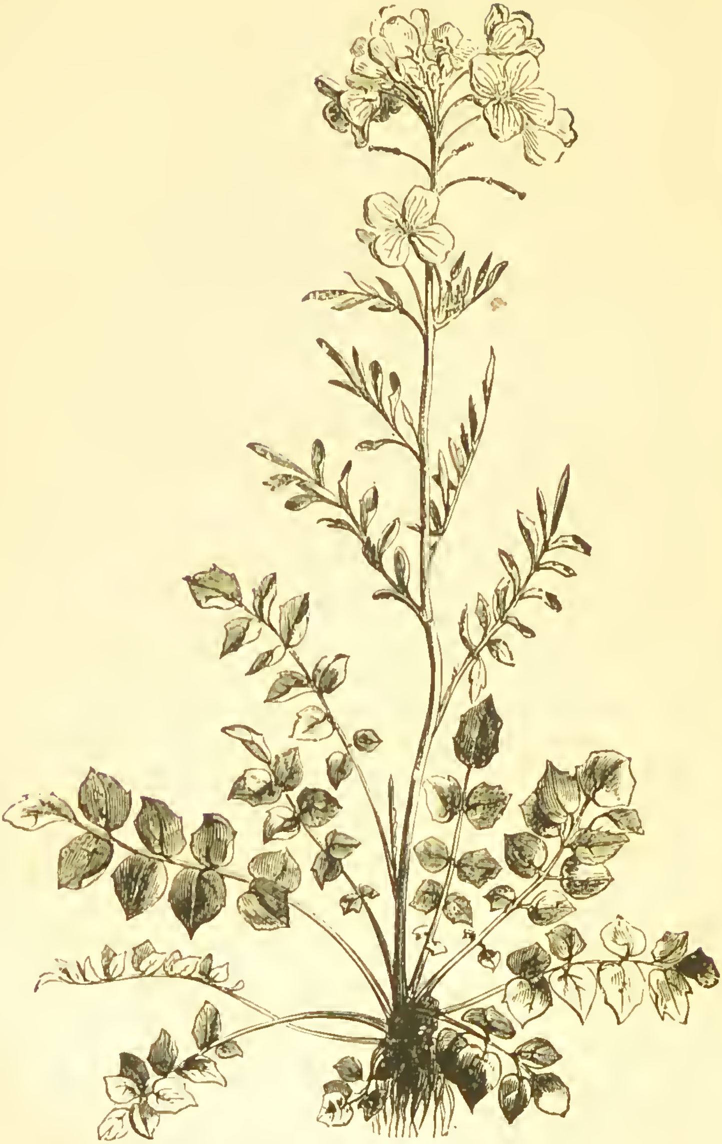
1. *D. bulbífera* (Bulbiferous Coral-root)—Well distinguished from any other British plant in the Order, by its purple *flowers*, its whitish toothed *roots*, and dark purple, scaly *bulbs*, which grow in the axils of the upper leaves, and falling off when mature produce new plants.—In shady places; rare.—Fl. April, May. Perennial.

* The little bulbs produced by this plant and some of the Lily Tribe, are to be considered as modified leaf-buds, from which they scarcely differ, except in being easily removed without receiving any injury.

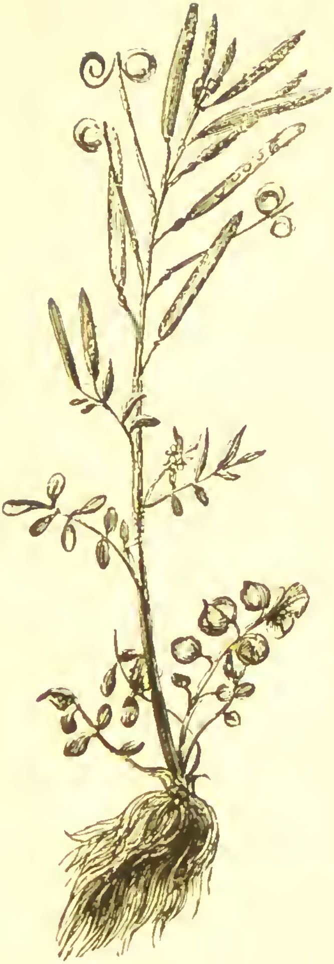
14. Cardamíné (*Bitter Cress*).

1. *C. amára* (Large-flowered Bitter Cress).—*Leaves* pinnate, without stipules; *root leaflets* roundish, those of the stem toothed or angular; *stem* creeping at the base; *style* oblique.—By the banks of rivers and canals; not common. The *flowers* are large and handsome, white, with purple anthers.—Fl. April, May. Perennial.

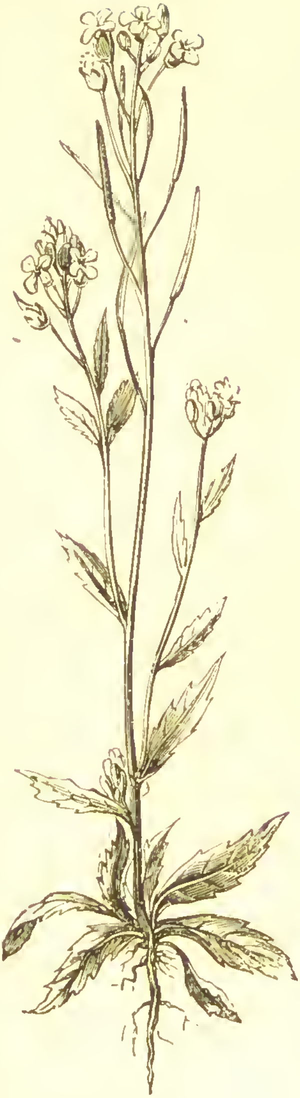
2. *C. pratensis* (Cuckoo-flower or Ladies' smock).—*Leaves* pinnate, without stipules; *root leaflets* roundish, slightly angular, those of the *stem* entire; *style* straight. A common and very pretty meadow plant with large lilac flowers. "They come with the Cuckoo," says Sir J. E. Smith, "whence one of their English as well as Latin names (*Flos cúculi*); and they cover the meadows as with linen bleaching, which is supposed to be that of the other. They are associated with pleasant ideas of



CARDAMÍNÉ PRATENSIS (*Cuckoo-flower, or Ladies' Smock*)



CARDAMINÉ HIRSÚTA
(Hairy Bitter Cress).



SISYMBRIUM THALIANUM, p. 61
(Thale Cress).

spring, and join with the white Saxifrage, the Cowslip, Primrose, and Hare-bell to compose many a rustic nosegay." A double variety is sometimes found wild, which is remarkably proliferous, the leaflets producing new plants when they come in contact with the ground, and the flowers, as they wither, sending up a stalked flower-bud from their centres.—Fl. May. Perennial.

3. *C. impatiens* (Narrow-leaved Bitter Cress).—*Leaves* pinnate; *stipules* fringed.—Moist rocks in some parts of Scotland and the north of England; rare.—Fl. May, June. Annual.

4. *C. hirsúta* (Hairy Bitter Cress).—*Leaves* pinnate, without stipules; *leaflets* stalked, toothed; *pods* erect. —A common weed everywhere, varying in size according to soil and situation, from six to eighteen inches in height. In dry localities it ripens its seeds in March or April, and withers away; but in damper places continues in flower all the summer. The leaves and young flower-stems afford an agreeable salad. The *flowers* are white, very small, and often imperfect, and are soon overtopped by the lengthening pods, the valves of which, when ripe, curl up with an elastic spring if touched, and fly off, scattering the seeds to a considerable distance.—Fl. all the Summer. Annual.

15. Árabis (*Rock Cress*).

1. *A. hirsúta* (Hairy Rock Cress).—*Leaves* all rough with hairs, those of the stem numerous, heart-shaped, embracing the stem.—A stiff, erect plant, frequent in many parts of Great Britain on walls and banks. *Flowers* small, white.—Fl. June, July. Biennial.

2. *A. petræa* (Alpine Rock Cress).—*Leaves* smooth, pinnatifid, with smaller lobes at the base; those of the stem simple, sessile.—On rocks in Scotland and Wales. *Flowers* larger than the last, tinged with purple.—Fl. July, August. Perennial.

* Three other species are found in various parts of Britain: *A. stricta* (Bristol Rock Cress), which grows on St. Vincent's Rocks, Clifton, and resembles *Sisymbrium thaliánum*, but has larger *flowers*; *A. ciliata*, which grows at Connemara, Ireland, and Glen Esk, Scotland, and has *leaves* smooth on both sides, and fringed at the edges: and *A. Turríta*, which grows on old walls in Cambridge and Oxford. The last is a doubtful native; its *flowers* are furnished with *bracts*, and the *pods* are curved downwards as they ripen.

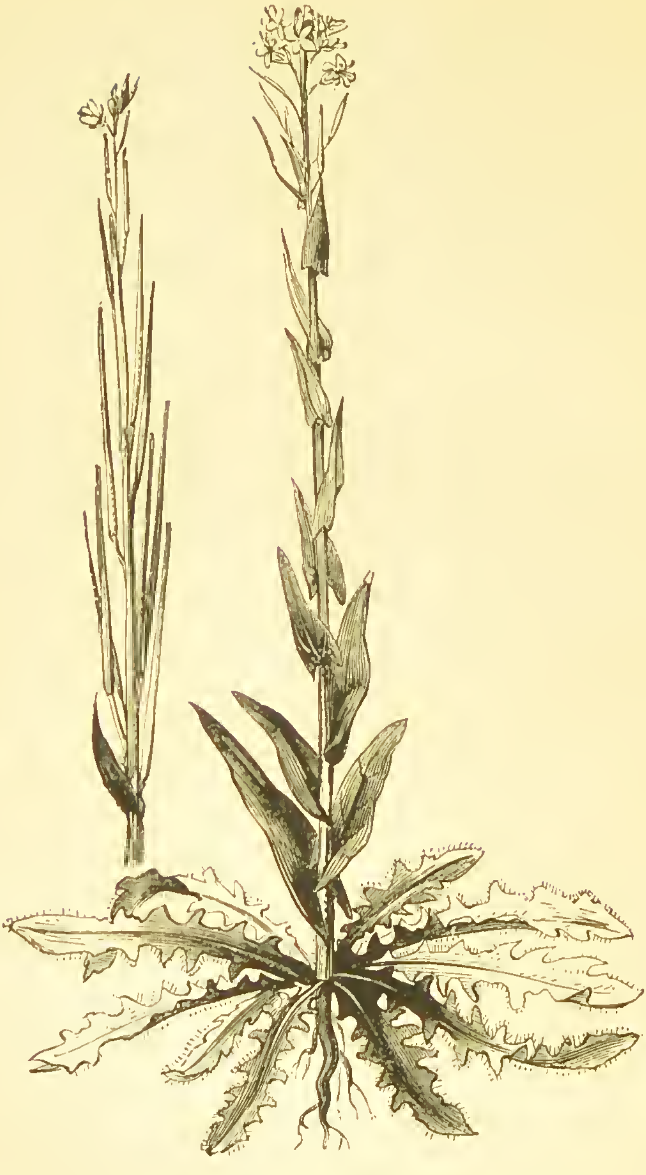
16. TURRÍTIS (*Tower Mustard*).

1. *T. glabra* (Smooth Tower Mustard).—The only British species, resembling in habit the preceding genus, from which it is distinguished by having the seeds in two rows instead of one. The *root-leaves* are toothed and rough, those of the *stem* entire and smooth; the *flowers* are pale yellow.—It grows on banks, and is most common in Norfolk and Suffolk.—Fl. May, June. Annual.

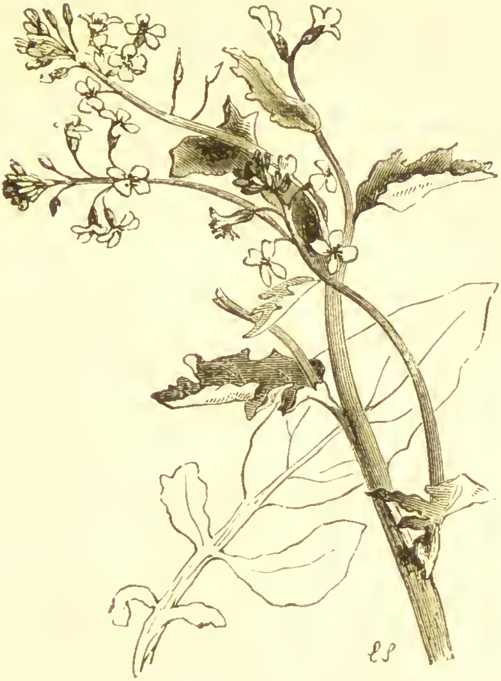
17. BARBAREA (*Winter Cress*).

1. *B. vulgáris* (Common Winter Cress).—*Lower leaves* lyrate, the terminal lobe roundish; *upper* obovate toothed.—Common in moist waste ground, where it may be readily detected by its smooth, shining, dark green *leaves*, and its erect angular stem bearing numerous bright yellow *flowers*. A variety with double flowers is frequent in gardens under the name of Yellow Rocket. —Fl. May—August. Perennial.

* Another species, *B. præcox* (Early Winter Cress), is not uncommon in the West of England, and is distinguished from the preceding by its slender habit and narrow *leaves*, and by being a Biennial.



TURRÍTIS GLABRA (*Smooth Tower Mustard*).



BARBARÉA VULGÁRIS (*Common Winter Cress*).

18. NASTURTIUM (*Cress*).

* *Flowers white.*

1. *N. officinálé* (Common Water Cress).—*Leaves* pinnate; *leaflets* roundish or oblong, toothed.—Abundant in rivulets and ponds, and, near large towns, extensively cultivated as a salad. The only plant for which it can well be mistaken by water-cress gatherers has hollow leaf-stalks, and serrated leaflets, which this has not.—Fl. June—August. Perennial.

* * *Flowers yellow.*

2. *N. sylvéstré* (Creeping Yellow Cress).—*Leaves* pinnate; *root* creeping.—Watery places; not common.—Fl. June—September. Perennial.

3. *N. terréstré* (Annual Yellow Cress).—*Leaves* pinnatifid; *root* fibrous; *petals* not longer than the calyx.—Watery places.—Fl. June—September. Annual.

NASTURTIUM OFFICINÁLÉ (*Common Water Cress*).

19. Sisýmbrium (*Hedge Mustard*).

1. *S. officinálé* (Common Hedge Mustard).—*Pods* downy, close pressed to the stem; *leaves* hairy, deeply lobed, with the points turned backward, the terminal lobe large; *stem* rough.—An unattractive plant, with

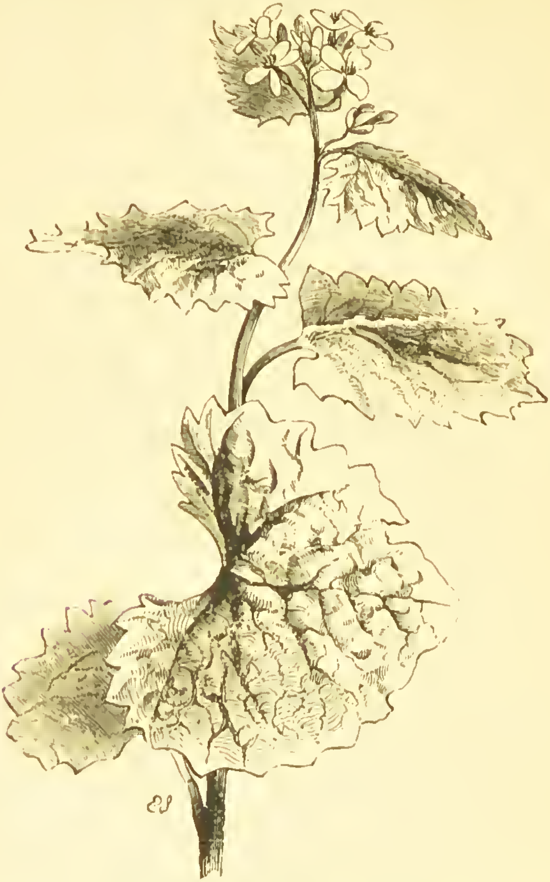
erect *branches*, from 1 to 2 feet high, and small yellow *flowers*. It grows in waste places, and by roadsides, where it seems to have a peculiar aptitude for collecting and retaining dust.—Fl. June, July. Annual.

SISYMBRIUM OFFICINÁLÉ (*Common Hedge Mustard*).

2. *S. Írio* (London Rocket).—*Leaves* deeply lobed, with the points turned backward, toothed, smooth as well as the stem; *pods* erect.—A leafy herb about 2 feet high, with small yellow flowers, growing in waste ground chiefly about London, where it covered the ground in the spring after the great fire.—Fl. July, August. Annual.

3. *S. Sóphia* (Flixweed).—*Leaves* twice pinnatifid, slightly hairy; *petals* shorter than the calyx.—More slender than either of the preceding, with small greenish yellow *petals*, which are almost hid by the calyx, and numerous erect *pods*, which when ripe have the appearance of being beaded, from the numerous projecting seeds. Not uncommon in waste places. It was called by the

old herbalists *Sóphia Chirurgórum,* "the Wisdom of Surgeons," from its supposed virtue in curing wounds.



ALLIARIA OFFICINÁLIS (*Garlic Mustard*).

4. *S. thaliánum* (Thale Cress, or Wall Cress).—*Leaves* oblong, somewhat toothed, hairy; *root-leaves* slightly stalked; *stem* branched; *pods* angular, twice as long as their stalks.—Common on dry banks and walls. A slender plant, with few *stem-leaves* and minute white *flowers,* from 6 to 12 inches high.—Fl. May—July. Annual.

20. ALLIÁRIA (*Garlic-Mustard*).

1. *A. officinális* (Garlic-Mustard, Jack-by-the-Hedge, or Sauce-alone).—*Leaves* broadly heart-shaped, stalked, veiny, with numerous broad teeth.—An early flowering hedge-plant, with delicate green leaves and snow-white flowers. The whole plant emits, when bruised, a nauseous scent of garlic, from which it derives its Latin and English names.—Fl. April—June. Ann.

CHEIRANTHUS CHEIRI (*Wall-flower*).

21. Erýsimum (*Treacle-Mustard*).

1. *E. cheiranthoídes* (Worm-seed Treacle-Mustard).—*Leaves* narrow, slightly toothed, roughish with three-forked bristles; *pods* erect on spreading stalks.—Fields, gardens, and waste places. A branched herb, 1 to 2 feet high, with dull green, sessile *leaves*, and small yellow *flowers* with whitish *sepals.*—Fl. July, August. Annual.

* Another species, *E. orientálê* (Hare's-ear Treacle-Mustard), with smooth entire *leaves*, and cream-coloured *flowers*, grows on some parts of the coast of Essex, Suffolk, and Sussex.

22. Cheíranthus (*Wall-flower*).

1. *C. Cheíri* (Wall-flower).—The only British species, flourishing best on the walls of old buildings, and flowering nearly all the summer, although scantily supplied with moisture. Many beautiful varieties are cultivated in gardens, some of which have double flowers. —Biennial.

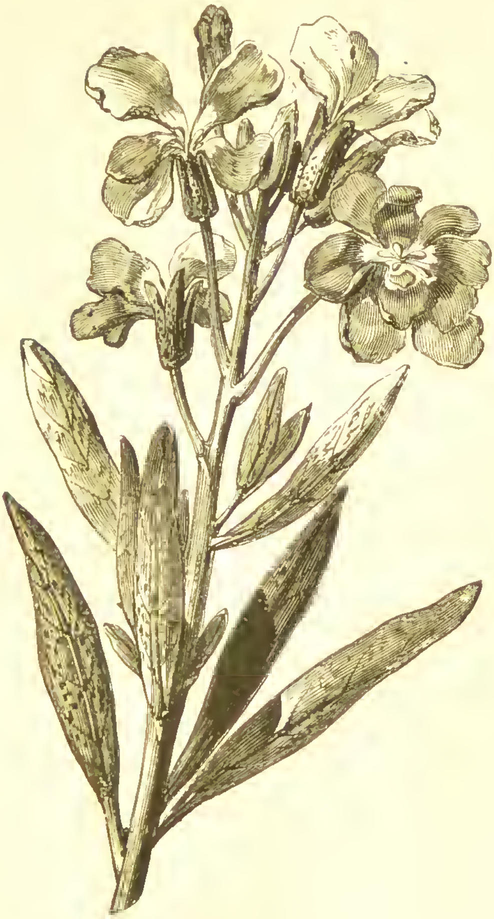
23. Matthíola (*Stock*).

1. *M. incána* (Hoary Shrubby Stock).—*Stem* shrubby, *leaves* hoary with down, entire; *pods* without glands.—The origin of the garden Stock. On the southern sea-shore of the Isle of Wight, especially about Niton. *Flowers* light purple.—Fl. May, June. Perennial.

2. *M. sinuáta* (Great Sea Stock).—*Stem* herbaceous, spreading; *leaves* oblong, downy, the lower ones imperfectly lobed; *pods* rough with prickles.—Sandy sea-coasts of Wales and Cornwall; *flowers* dull purple, fragrant by night.—Fl. August. Biennial.

24. Brássica (*Cabbage*).

1. *B. campestris* (Common wild Navew).—*Root-leaves* lyrate, toothed, roughish; *stem-leaves* smooth, heart-shaped, tapering to a point; all somewhat glaucous.—Borders of fields; common. Often confounded with



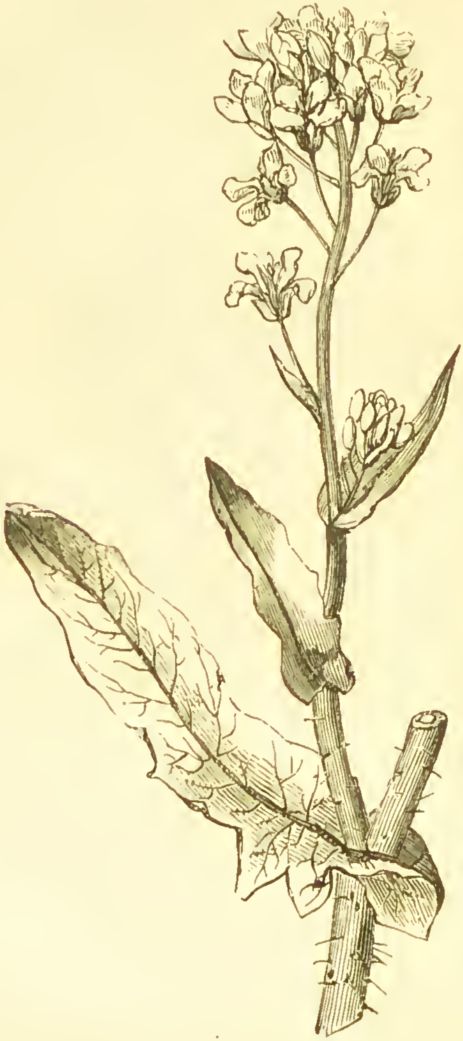
MATTHIÓLA INCÁNA (*Hoary Shrubby Stock*).

Charlock, from which, however, it may readily be distinguished by the smoothness and glaucous hue of its upper leaves.—Fl. June, July. Annual.

2. *B. olerácea* (Sea Cabbage).—*Root* stem-like, fleshy; *leaves* perfectly smooth, glaucous, waved, lobed; *stem leaves* oblong, obtuse.—The original of all the varieties of garden cabbage, growing on several parts of the sea-

coast.—*Flowers* lemon-coloured, larger than the preceding.—Fl. May, August. Biennial.

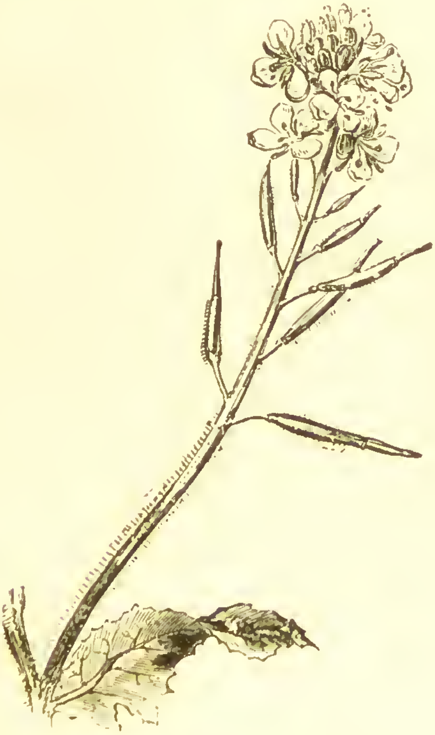
3. *B. Moniensis* (Isle of Man Cabbage).—*Leaves* glaucous, pinnatifid; *stem* nearly leafless; *pods* four-angled; beak 1- to 3-seeded.—Sandy sea-shores on the north-



BRÁSSICA CAMPESTRIS (*Common wild Navew*).

western coast of Britain.—*Flowers* bright lemon-coloured, veined with purple.—Fl. June, July. Perennial.

* Two other species of *Brássica* are described by botanists ; *B. Nápus* (Rape or Cole-seed), which is cultivated for the sake of the oil pressed from its seeds, the refuse being used, under the name of oil-cake, for feeding cattle ; and *B. Napa* (the common Turnip) ; neither of which is really wild. Brocoli and Cauliflower are varieties of Cabbage, which have a tendency to produce an unusual abundance of flower-buds. They are cut for the table before the flowers have had time to expand. In the variety known by the name of Brussels sprouts, the unexpanded leaf-buds are eaten.



SINÁPIS ARVENSIS (*Wild Mustard Cherlock.*)

25. Sinápis (*Mustard*).

1. *S. arvensis* (Wild Mustard, Cherlock).—*Pods* with many angles, rugged, longer than the awl-shaped beak; *leaves* toothed, rough.—A common weed in corn-fields, and sometimes springing up profusely from ground which has recently been disturbed, though unknown there before.—Fl. all the summer. Annual.

2. *S. alba* (White Mustard).—*Pods* bristly, rugged, spreading, shorter than the flat two-edged beak; *leaves* pinnatifid.—Waste ground; *flowers* large, yellow. The young leaves of this species are used as salad.—Fl. June. Annual.

PODS OF WHITE MUSTARD.

3. *S. nigra* (Common Mustard).—*Pods* quadrangular, smooth, slightly beaked, close pressed to the stalk; *lower leaves* lyrate; *upper* linear, pointed, entire, smooth.—Taller than either of the preceding, but bearing smaller flowers. The seeds yield the mustard of our tables.—Fl. June, July. Annual.

The Mustard-tree of Scripture is supposed, by some authors, to be a species of *Sinápis* closely resembling the British plants of the same genus. But inasmuch as this plant, though more luxuriant than any with which we are acquainted, never attains the dimensions of a tree, it has with some probability been conjectured that the plant in question is the *khardal* of the Arabs, a tree abounding near the sea of Galilee, which bears numerous branches, and small seeds, having the flavour and properties of Mustard.

26. Diplotaxis (*Rocket*).

1. *D. tenuifólia* (Wall Rocket).—*Pods* linear, slightly beaked, erect; *stem* erect, slender, smooth, leafy; *leaves* very narrow, smooth, acute, deeply divided into narrow segments.—A slender, branched plant, from one to two feet high, with a tough stem, woody below, scattered foliage, and large light yellow flowers; it grows on walls, quarries, and rubbish, principally in the neighbourhood of large towns. Fl. all the summer. Perennial.

* *D. murális* (Sand Rocket), an annual, with a bristly stem, is very like the last, and grows in barren places near the sea, but is not considered indigenous.

RÁPHANUS RAPHANISTRUM (*Wild Radish*).

27. Ráphanus (*Radish*).

1. *R. Raphanistrum* (Wild Radish).—A bristly or almost prickly plant, with horizontal, lyrate *leaves*, and rather large straw-coloured *flowers* veined with purple; well distinguished when in seed by its jointed 1-celled *pods*. A variety named *R. marítimus*, which grows on sea-cliffs, has its leaves composed of small and large leaflets arranged alternately, but is not otherwise distinct. In both varieties the flowers are sometimes almost white.

Ord. VII.—RESEDACEÆ.—The Rocket Tribe.

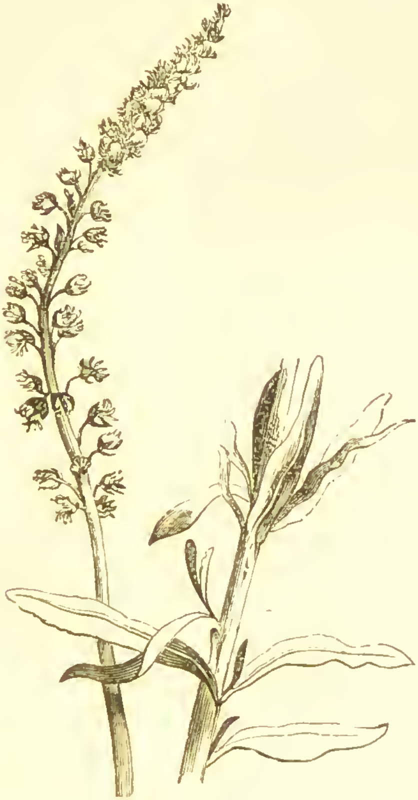
Sepals 4—6, narrow; *petals* unequal, ragged or fringed at the back; *stamens* 10—24, inserted as well as the petals on an irregular disc, which is placed on one side of the flower; *stigmas* 3, sessile; *ovary* 3-lobed, 1-celled, many-seeded, open at the summit; *seeds* in three rows.—Herbaceous or somewhat shrubby plants, with alternate leaves and minute stipules, having their flowers in clusters or spikes. Most of the plants of this order inhabit Europe and the nearest parts of Asia and Africa. *Reséda odoráta*, Mignonette, is a native of Egypt, and on account of the delicious perfume of its flowers is admitted into every garden.

1. Reséda (Rocket).—*Calyx* many-parted; *petals* entire, or variously cut, unequal; *stamens* numerous; *capsule* 1-celled, opening at the top. (Name from *resédo*, to calm, from the supposed sedative qualities of some species.)

1. Reséda (*Rocket*).

1. *R. Lutéola* (Dyer's Rocket, Yellow-weed, or Weld). —*Leaves* narrow, undivided; *calyx* 4-parted.—Waste places, especially on a chalk or limestone soil. An erect herbaceous plant, 2—3 feet high, with long blunt shining leaves, and terminal spike-like clusters of yellowish flowers, with conspicuous stamens, and short, flattened

capsules. It is used to dye wool yellow, or, with indigo, green; the whole plant, when in flower, being boiled for that purpose.—Fl. July. Biennial.



RESÉDA LUTEOLA (*Dyer's Rocket*).

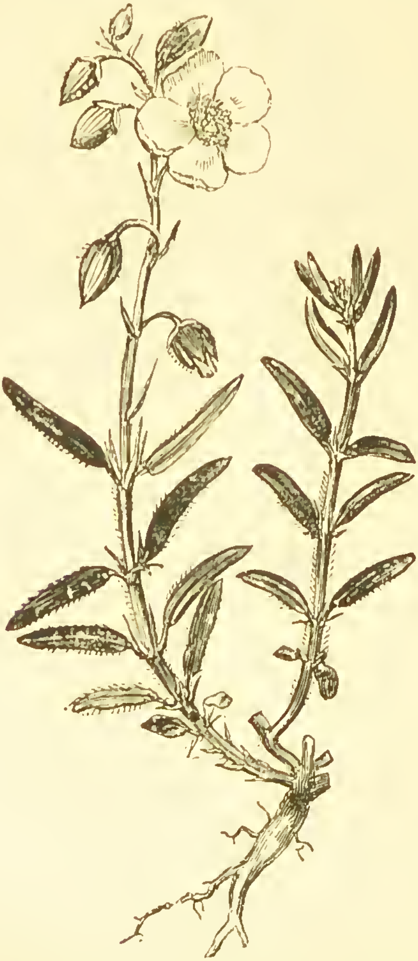
2. *R. lútea* (Wild Mignonette).—*Leaves* 3-cleft, lower ones pinnatifid; *calyx* 6-parted; *petals* 6, very unequal.—On chalky hills and waste places. More bushy than the last, from which it may be well distinguished by the above characters, as well as by the shorter and broader clusters.—Fl. July, August. Biennial.

* Another species, *R. fruticulosa* (Shrubby Rocket),

which is not uncommon in gardens, is occasionally found in waste places, but has little claim to be considered a native. It may be distinguished by the glaucous hue of its pinnate leaves, and by its 5-cleft flowers.

ORD. VIII.—CISTACEÆ.—THE ROCK-ROSE TRIBE.

Sepals 5, unequal, the three inner twisted in the bud; *petals* 5, twisted, when in bud, in a direction con-



HELIANTHEMUM VULGÁRÉ (*Common Rock-Rose*).

trary to the sepals, soon falling off; *stamens* numerous; *ovary* single, one- or many-celled; *style* and *stigma* simple; *capsule* 3- 5- or rarely 10-valved; *seeds* numerous.—Mostly shrubby, but sometimes herbaceous, plants, often with viscid branches; *leaves* entire; *flowers* white, yellow, or red, lasting a very short time. The plants of this order are almost confined to the south of Europe and north of Africa; the only species which possesses any remarkable properties is *Cistus Créticus,* which affords the balsam called *Gum Ladanum.*

1. Heliánthemum (Rock-Rose).—*Sepals* 5, the two outer either smaller or wanting; *petals* 5; *stamens* numerous; *capsule* 3-valved.—(Name from the Greek, *hélios,* the sun, and *anthos,* a flower, because the flowers expand in the morning.)

1. Heliánthemum (*Rock-Rose*).

1. *H. vulgáré* (Common Rock-Rose).—*Stem* shrubby, prostrate; *leaves* with fringed stipules, oblong, green above, hoary beneath; *calyx* of 5 leaves, the two outer very small, fringed.—A beautiful little branching shrub, with clusters of large bright yellow flowers, frequent in hilly pastures on a chalky or gravelly soil, where its flowers only expand during sunshine; the stamens, if lightly touched, spread out, and lie down on the petals. —Fl. July, August. Perennial.

* There are three other British species of *Heliánthemum,* which are all of local occurrence, and rare:—*H. canum* (Hoary Rock-Rose) grows on Alpine rocks, in Wales and the north of England; the leaves are destitute of stipules, and very hoary beneath, the flowers are yellow. *H. guttatum* (Spotted Rock-Rose) is a herbaceous species and an annual; the flowers are yellow, with a blood-red spot at the base of each petal. *H. polifolium* (White Rock-Rose), a small shrubby species with white flowers, grows on Brent Downs in Somersetshire, and on several parts of the sea-coast of Devonshire.

ORD. IX.—VIOLACEÆ.—THE VIOLET TRIBE.

Sepals 5; *petals* 5, sometimes unequal; *stamens* 5; *anthers* lengthened into a flat membrane; *style* with an oblique hooded stigma; *ovary* 1-celled; *seeds* numerous, in three rows.—A beautiful and important tribe of herbaceous plants or shrubs, strongly marked by the above characters, inhabiting most regions of the world, except those parts of Asia which are within the tropics. Those which grow in temperate regions are mostly herbaceous; but in South America, where they are abundant, most of the species are shrubs. The roots of some species are highly valuable in medicine, furnishing Ipecacuanha, well known for its sudorific and emetic properties. The British species also possess medicinal properties, though they are rarely used.

1. VÍOLA (Violet).—*Sepals* 5, extended at the base; *petals* 5, unequal, the lower one lengthened into a hollow spur beneath; *anthers* united into a tube, two lower ones furnished with spurs, which are enclosed within the spur of the corolla; *capsule* with three valves. (*Viola* was the Latin name of some fragrant flower, which was called by the Greeks *Ion.*)

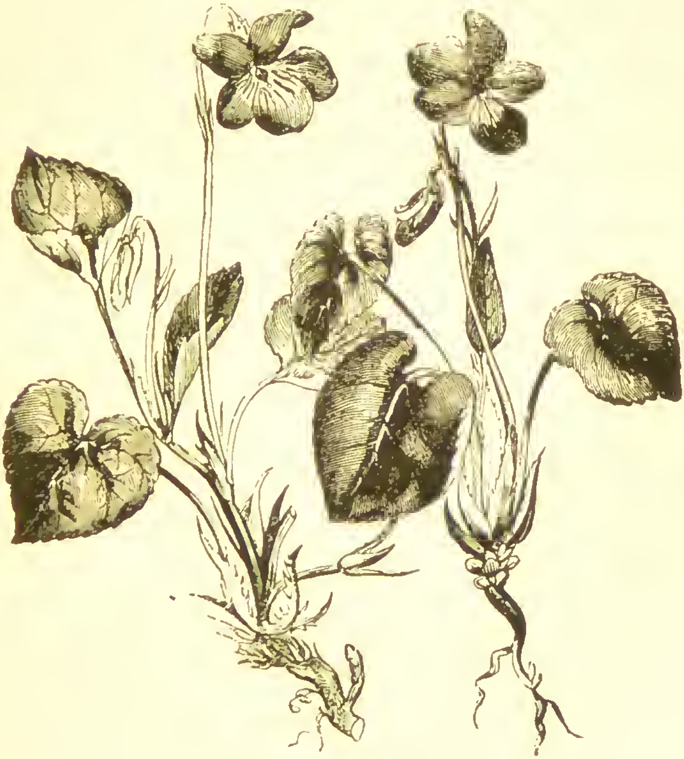
1. VÍOLA (*Violet*).

* *Leaves and Flowers all springing directly from the root.*

1. *V. hirta* (Hairy Violet).—*Leaves* heart-shaped, rough, as well as their stalks, with hairs; *bracts* below the middle of the flower-stalks; *sepals* obtuse; lateral *petals* with a hairy central line.—Common in chalk and limestone districts, or near the sea. *Flowers* various shades of blue, rarely white, scentless. Best distinguished from the sweet violet (to which it is nearly allied) by its very hairy leaves and capsules, by the position of the bracts, and by the absence of creeping scions.—Fl. April, May. Perennial.

2. *V. odoráta* (Sweet Violet).—*Leaves* heart-shaped,

slightly downy, especially beneath; *bracts* above the middle of the flower-stalks; *sepals* obtuse; lateral *petals* with a hairy central line; *scions* creeping.—One of the most highly prized of all our wild flowers, unrivalled in fragrance, delicacy and variety of tinting, and doubly welcome from its appearing so early in spring. The flowers are deep purple, lilac, pale rose-coloured, or white,



VIOLA CANINA, *and* V. ODORATA.

and all these tints may sometimes be discovered on the same bank. The roots possess the medicinal properties of Ipecacuanha, and the flowers are used as a laxative for children. An infusion of the petals is employed as a chemical test, being changed to red by acids, and by alkalies to green. The flowers are said to communicate their flavour to vinegar in which they have been steeped, and it is also said, that they are used in the preparation of the Grand Seignor's sherbets.—Fl. March, April. Perennial.

3. *V. palustris* (Marsh Violet).—*Leaves* heart- or kidney-shaped, quite smooth ; *sepals* obtuse ; *spur* very short ; *root* creeping ; *scions* none.—Bogs and marshy ground, common. *Flowers* delicate lilac, with darker veins ; *leaves* light green, often purplish beneath.—Fl. April—June. Perennial.

** *With an evident stem.*

4. *V. canína* (Dog Violet).—*Stem* channeled, leafy, ascending ; *leaves* heart-shaped, acute ; *sepals* acute ; *stipules* long, toothed and fringed ; *bracts* awl-shaped entire.—Hedges, heaths, and rocky ground ; the most common species.—*Flowers* light blue, purple or white, more abundant, and lasting longer than any of the preceding, but less beautiful, and scentless. This species appears to have received its specific name as a reproach for its want of perfume. Three varieties with very pale blue flowers and narrow leaves, are by some botanists considered distinct species, and named *V. láctea*, *V. púmila*, and *V. stagnína.*—Fl. April—July. Perennial.

5. *V. trícolor* (Pansy or Heartsease).—*Stem* angular branched ; *leaves* oblong, crenate ; *stipules* deeply cut, terminal lobe broad, crenate.—Cultivated fields.—Very different in habit from any of the preceding, and varying considerably in the size and colour of its flowers, which are, however, most frequently light yellow, either pure, or tinged with purple. The cultivated varieties are countless.—Fl. all the summer. Generally annual.

6. *V. lútea.* (Yellow Mountain Violet, or Mountain Pansy).—*Stem* angular, branched principally at the

base ; *leaves* oblong, crenate; *stipules* deeply cut, terminal lobe narrow, entire.—Mountain pastures.—Nearly allied to the preceding, and as variable in the size and colour of its flowers.—Fl. June, July. Perennial.

ORD. X.—DROSERACEÆ.—SUNDEW TRIBE.

Sepals 5, equal ; *petals* 5 ; *stamens* distinct, either equal in number to the petals, or 2, 3, or 4 times as many ; *ovary* single ; *styles* 3—5, often 2-cleft or branched ; *capsule* of 1 or 3 cells, and 3 or 5 valves, which bear the seeds at the middle or at the base.

Sub-order I.—DROSÉREÆ.

Styles elongated ; *leaves* clothed with glandular hairs.—Delicate, herbaceous, marsh plants, often covered with glands ; *leaves* alternate, rolled in at the edges before expansion ; *flower-stalks* curled when in bud. The leaves of plants belonging to this order are covered with irritable hairs, by which flies and other small insects are entangled and destroyed. The Sundews are acrid, and impart a red dye to the paper in which they are dried. The leaves of *Dionæa* are furnished with a two-lobed appendage, each half of which has three sharp spines in the middle, and is fringed at the edge. When touched by an insect, these two lobes instantaneously close on the ill-fated intruder, and crush it to death. After a short time they open again in readiness for another victim.

1. DRÓSERA (Sundew).—*Sepals* 5 ; *petals* 5 ; *stamens* 5 ; *styles* 3—5, deeply cleft ; *capsule* 1-celled, 3—5 valved.—(Name from the Greek *drosys*, dew, the leaves being covered with red hairs, which exude drops of viscid fluid, especially when the sun is shining, and appear as if tipped with dew.)

Sub-order II.—PARNASSIEÆ.

Stigmas sessile; *leaves* smooth.—The only British representative of this Sub-order is the beautiful plant Parnassia. By some botanists it is placed in the same Order with Hypericum; but with questionable propriety.

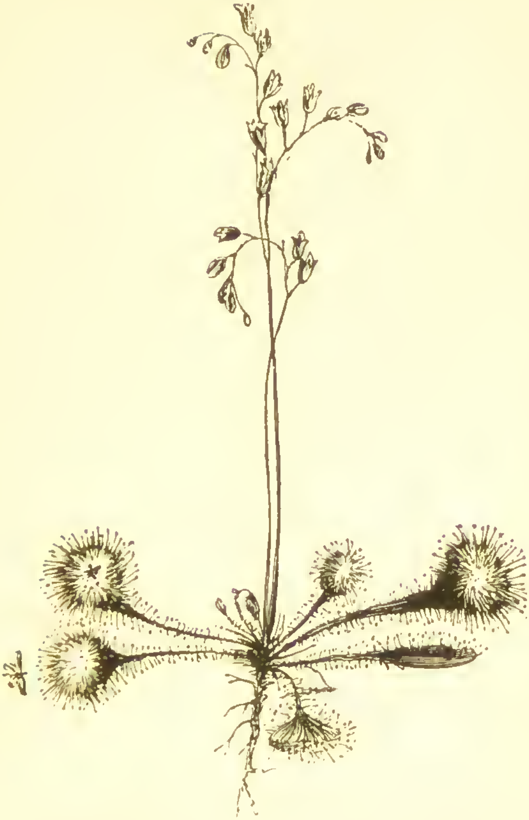
2. PARNASSIA (Grass of Parnassus).—*Calyx* deeply 5-cleft; *petals* 5; *stamens* 5, with 5 fringed scales interposed; *stigmas* 4; *capsule* 1-celled, with 4 valves.—(Name from Mount Parnassus, but on what account is uncertain.)

1. DRÓSERA (*Sundew*).

1. *D. rotundifolia* (Round-leaved Sundew).—*Leaves* all from the root, spreading horizontally, round; *leaf-stalks* hairy; *seeds* chaffy.—An exceedingly curious little plant, 2—6 inches high, growing in bogs. The root is small and fibrous, and takes a very slight hold in the ground; the leaves are densely covered with red hairs, each of which is tipped with a drop of viscid fluid; from the centre of the tuft of leaves rises a wiry leafless stalk, bearing several small whitish flowers which only expand in sunny weather; the flowers are all on one side of the stalk, which in its early stage is curled up, and gradually uncoils itself as the flowers severally expand.—Fl. July, August. Perennial.

2. *D. longifolia* (Long-leaved Sundew).—*Leaves* all from the root, erect, elongated, broad at the extremity, and tapering towards the base; *leaf-stalks* smooth; *seeds* with a rough, not chaffy coat.—Smaller than the last, and growing with it in boggy places.—Fl. July, August. Perennial.

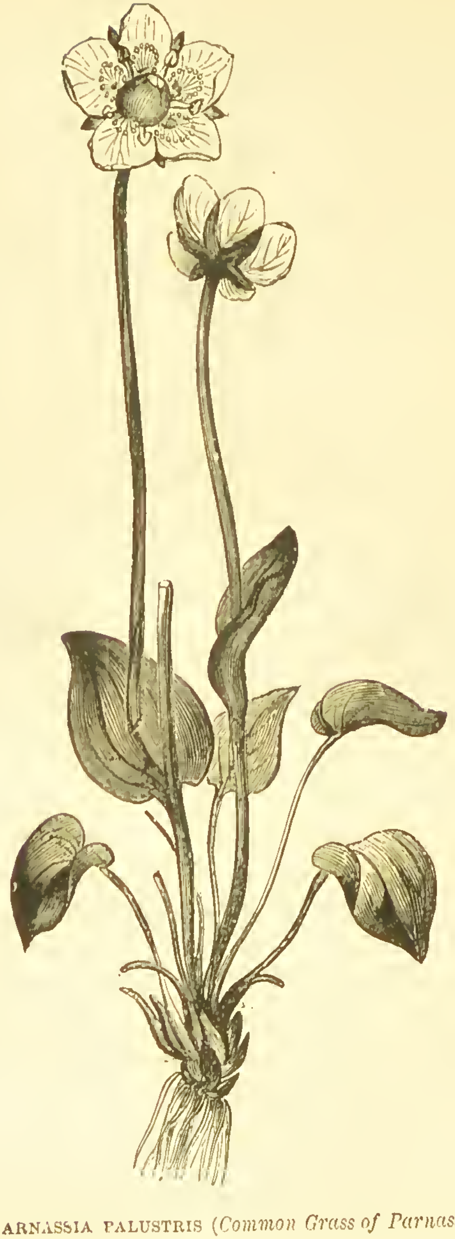
3. *D. Ánglica* (Great Sundew).—*Leaves* all from the roots, erect, oblong, on very long smooth stalks; *seeds* with a loose chaffy coat.—Stouter and taller than the last, and growing in similar situations, but rare.—Fl. July, August. Perennial.



DRÓSERA ROTUNDIFOLIA (*Round-leaved Sundew*).

2. PARNASSIA (*Grass of Parnassus*).

1. *P. palustris* (Common Grass of Parnassus).—The only British species.—Bogs, principally in the north. An exceedingly elegant plant, 8—10 inches high, with solitary cream-coloured flowers, beautifully veined. The nectaries are fan-like scales, fringed with white hairs, and terminating in yellow wax-like glands.—Fl. August —October. Perennial.



PARNASSIA PALUSTRIS (*Common Grass of Parnassus*).

ORD. XI.—POLYGALACEÆ.—THE MILKWORT TRIBE.

Sepals 5, unequal, the two inner larger, generally petal-like ; *petals* 3—5, unequal, more or less combined with the filaments ; *stamens* 8, in two equal sets ; *anther* 1-celled, opening by pores at the summit ; *pistil* 1 ; *capsule* 1—3 celled ; *seeds* pendulous.—An extensive tribe of herbaceous or shrubby plants, with clustered, often showy flowers. Many are bitter, and their roots are milky. Medicinally they are said to be useful in affections of the lungs, and to excite perspiration. The most celebrated is a North American herb, *Polýgala Senega* (Snake-root), to which extraordinary virtues are ascribed. Several species are said to cure snake-bites. *Krameria* (Rhatany-root) is astringent, and furnishes a red infusion used to adulterate Port wine. Some of the above properties, but in a less degree, reside in the only British genus, *Polýgala*.

1. POLÝGALA (Milkwort).—*Sepals* 5, the two inner coloured, wing-shaped ; *petals* combined with the filaments, the lower one keeled ; *capsule* flattened, 2-celled, 2-valved ; *seeds* downy, crested at the base. (Name from the Greek, signifying *much milk*, the juice of the root being milky.)

1. POLÝGALA (*Milkwort*).

1. *P. vulgáris* (Common Milkwort).—Lower *petal* crested in a star-like manner ; *calyx-wings* about equal in length to the corolla ; *bracts* 3, at the base of each flower ; *stems* simple, ascending, herbaceous ; *leaves* narrow.—Common on heaths and dry pastures, where it is highly ornamental during the later summer months, with its starlike, blue, pink or white flowers. —Fl. June—August. Perennial.

* In the chalk districts a *Polýgala* occurs, which is made by some botanists a distinct species, under the rather alarming name of *P. calcárea* (Chalk Milkwort). It differs from the preceding in having the lower leaves

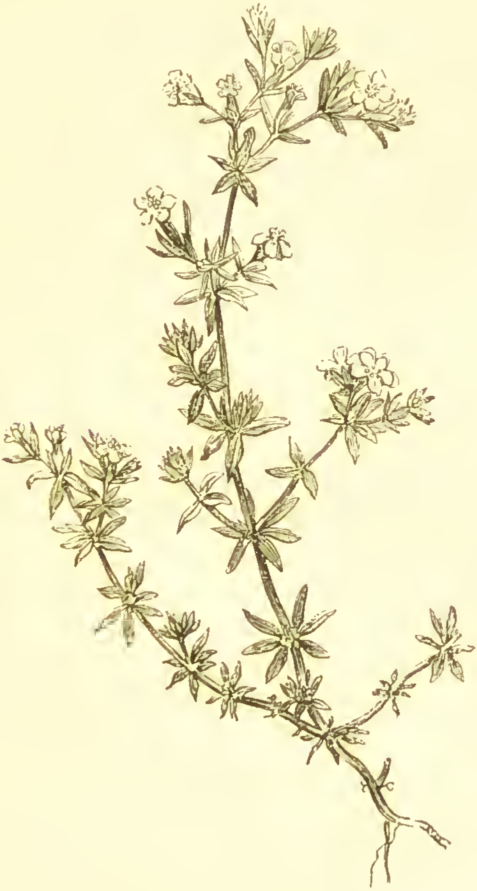
tufted, blunt calyx-wings which are differently veined, and in ceasing to flower almost before the common

POLYGALA VULGÁRIS (*Common Milkwort*).

Milkwort begins. Another variety or species with the leaves in a rosette, has been named *P. Austríaca.*

ORD. XII.—FRANKENIACEÆ.—SEA-HEATHS.

Sepals 4—6 united into a furrowed tube, not falling off; *petals* equal in number to the sepals, furnished with claws, and usually having scales at the junction of the claw and limb; *stamens* equal in number to the petals; *ovary* 1; *style* thread-like, 2, 3, or 4-cleft; *capsule* 1-celled, 2, 3, or 4-valved; *seeds* very minute, attached to the edges of the valves.—Herbaceous or somewhat shrubby plants, with branched stems, opposite leaves, which have a membranous sheathing base, and numerous small sessile flowers, inhabiting principally the north of Africa and south of Europe.



FRANKÉNIA LÆVIS (*Smooth Sea-Heath*).

1. FRANKÉNIA (Sea-Heath).—*Style* 3-cleft ; *lobes* oblong, with the stigma on their inner side ; *capsule* 3—4-valved. (Name from *John Franken,* a Swedish botanist.)

1. Frankénia (*Sea-Heath*).

F. lævis (Smooth Sea-Heath).—*Leaves* narrow, rolled back at the edges, smooth, fringed at the base; *flowers* terminal, or from the forks of the stem.—A small procumbent plant, with wiry stems, crowded leaves, and pale rose-coloured flowers, growing in muddy salt marshes on the eastern coasts of England.—Fl. July. Perennial.

* Another species, *F. pulverulenta* (Powdery Sea-Heath), formerly grew on the sea-coast of Sussex, but is now extinct.

Order XIII.—ELATINACEÆ.—Water-wort Tribe.

Sepals 3—5, distinct, or growing together at the base; *petals* equal in number to the sepals; *stamens* equalling, or twice as many as the petals; *ovary* with 3—5 cells, and as many styles and globular stigmas; *capsule* with 3—5 cells and valves; *seeds* wrinkled, springing from the centre of the capsule.—Minute, annual, aquatic herbs, with rooting stems and opposite leaves; found in most parts of the world.

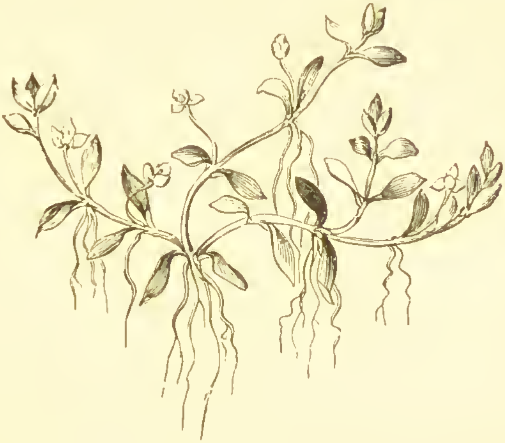
1. Elatíné (Water-wort).—*Sepals* 3—4, growing together at the base; *petals* 3—4; *stamens* 3—4, or 6—8; *styles* 3—4-celled, many-seeded; *seeds* cylindrical, furrowed, and transversely striated. (Name of doubtful origin.)

1. Elatíné (*Water-wort*).

1. *E. hexandra* (Six-stamened Water-wort).—*Flowers* stalked; *petals* 3; *stamens* 6; *capsule* 3-celled; *seeds* straight.—A minute plant, forming turfy beds on the margin of lakes, or growing entirely submersed. When left by the subsiding water it assumes a bright red hue, but the flowers are at all times inconspicuous. Rare. —Fl. July—September. Annual.

2. *E. Hýdropiper* (Eight-stamened Water-wort).—

Flowers sessile ; *petals* 4 ; *stamens* 8 ; *capsule* 4-celled ; *seeds* curved.—Yet rarer than the preceding, and growing in similar situations.—Fl. July—September. Annual.



ELATÍNÉ HEXANDRA (*Six stamened Water-wort*).

ORDER XIV.—CARYOPHYLLACEÆ.

Sepals 5 or 4, distinct, or connected into a tube ; *petals* equal in number to the sepals ; *stamens* usually twice as many as, sometimes equalling, the petals, and like them inserted on the stalk or ring of the ovary ; *ovary* 1, raised on a short stalk, or inserted in a ring ; *stigmas* 2—5, running along the inner surface of the styles ; *capsule* 1 or imperfectly 2—5-celled, opening by twice as many teeth, or valves, as there are styles ; *seeds* inserted on a central column.—An extensive and well marked order of herbaceous plants, inhabiting the temperate and frigid regions of the globe, and not unfrequently bearing ornamental flowers. The stems are swollen at the joints : the leaves always opposite and undivided, and frequently of a glaucous hue. Among garden flowers, the Pink, Carnation, Sweet William, and Scarlet Lychnis, all belonging to this order, are well known; and our hedges are much indebted for their showy appearance in spring to the great White Stitchwort, and in summer to the Red and White Robin. Botanists have distributed the plants of this order into two groups, or sub-orders.

Sub-order I.—SILÉNEÆ.—*Pink Tribe.*

Sepals connected into a tube; *stamens* united at the base with the stalk of the ovary.

* *Calyx* 5-*cleft; petals* 5, *with long claws; stamens* 10.

1. DIANTHUS (Pink).—*Calyx* with 2 or more opposite scales at the base outside; *styles* 2; *capsule* 1-celled, opening at the top with four valves; *seeds* flattened. (Name in Greek signifying *the flower of Jupiter*, from its beauty and fragrance.)

2. SAPONARIA (Soapwort).—*Calyx* naked at the base; *styles* 2; *capsule* 1-celled, opening at the top with 4 valves; *seeds* rounded. (Name from *sapo*, soap, the plant abounding in a soapy juice.)

3. SILÉNÉ (Catchfly).—*Calyx* naked at the base; *petals* generally crowned at the top of the claw; *styles* 3; *capsule* imperfectly 3-celled, opening at the top with 6 valves. (Name of doubtful origin. The English name was given in consequence of flies being often caught in the viscid fluid which, in some species, surrounds parts of the stem.)

4. LYCHNIS (Campion).—*Calyx* naked at the base; *petals* generally crowned at the top of the claw; *styles* 5; *capsule* opening at the top with 5 or 10 teeth. (Name from the Greek *lychnos*, a lamp; "the thick cottony substance on the leaves of some species, or some similar plant, having been employed as wicks to lamps." —*Hooker.*)

5. Agrostemma (Corn-cockle).—*Calyx* naked at the base, tough, with leaf-like divisions ; *petals* undivided ; *capsule* opening at the top with 5 teeth. (Name signifying in Greek, *Crown of the Field.*)

Sub-order II.—Alsíneæ.—*Chickweed Tribe.*

Sepals distinct ; *stamens* inserted into a ring beneath the capsule, which is not stalked.

6. Sagína (Pearl-wort). — *Sepals* 4 — 5, spreading when in fruit ; *petals* 4—5, minute, or sometimes wanting ; *stamens* 4 to 10 ; *styles* 4—5 ; *capsule* 4—5-valved. (The name in Latin signifies *fattening meat*, but is totally inapplicable to the minute plants of this genus.)

7. Mœnchia.—*Sepals* 4, erect ; *petals* 4 ; *stamens* 4 ; *styles* 4 ; *capsule* opening at the top with eight teeth. (Name in honour of *Conrad Mœnch*, Professor of Botany at Hesse-Cassel.)

8. Holósteum (Jagged Chickweed).—*Sepals* 5 ; *petals* 5, toothed at the margin ; *stamens* 3—5 ; *styles* 3 ; *capsule* opening at the top with 6 teeth. (The name signifies in Greek, *all bone ;* but why it was given is uncertain.)

9. Stellária (Stitchwort).—*Sepals* 5 ; *petals* 5, deeply 2-cleft ; *stamens* 10 ; *styles* 3 ; *capsule* opening with 6 valves, or teeth. (Name from *stella*, a star, which the expanded flowers resemble in shape.)

10. Honckénya (Sea Purslane).—*Sepals* 5 ; *petals* 5, entire ; *stamens* 10 ; *styles* 3—5 ; *seeds* few, large ; *flowers* with the stamens or pistils imperfect. (Name from M. Honckeny, a German botanist.)

11. Arenária (Sandwort).—*Sepals* 5 ; *petals* 5, entire ; *stamens* 10 ; *styles* 3 ; *capsule* opening with 6 valves ; *flowers* all perfect ; *seeds* many, minute. (Name from the Latin *aréna*, sand, many species growing in sandy ground.)

12. Cerástium (Mouse-ear Chickweed).—*Sepals* 5 ;

petals 5, 2-cleft; *stamens* 10 or 5; *styles* 5; *capsule* tubular, opening at the end with 10 or rarely 5 teeth. (Name from the Greek *keras*, a horn, from the shape of the capsule in some species.)

13. MALÁCHIUM (Mouse-ear Chickweed).—*Sepals* 5; *petals* 5, deeply 2-cleft; *stamens* 10; *styles* alternate with the *sepals*; *capsule* opening to the middle with 5 valves. (Name from the Greek *málakos*, feeble, from the nature of the plant.)

14. CHERLÉRIA (Cyphel).—*Sepals* 5; *petals* 0, or 5, exceedingly minute, notched; *stamens* 10, the 5 outer with glands at the base; *styles* 3; *capsule* 3-valved; *flowers* with their stamens or pistils imperfect. (Name from *J. H. Cherler*, an eminent botanist.)

1. DIANTHUS (*Pink*).

* *Flowers clustered.*

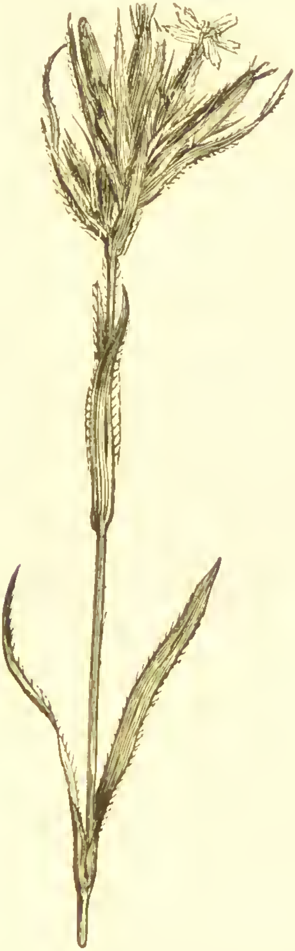
1. *D. Arméria* (Deptford Pink).—*Stem* and *leaves* downy; *flowers* in close tufts; *calyx-scales* very narrow, downy, as long as the tube.—Waste places; rare. From 1 to 2 feet high, with rose-coloured scentless flowers, dotted with white.—Fl. July, August. Annual.

2. *D. prólifer* (Proliferous Pink).—*Stem* smooth; *leaves* roughish at the edge; *flowers* in heads; *calyx scales* membranous, pellucid.—Gravelly pastures; rare. Growing about a foot high, and readily distinguished by its heads of rose-coloured flowers, only one of which opens at a time, and by the brown dry scales in which the heads of flowers are enclosed.

** *Flowers not clustered.*

3. *D. Caryophýllus* (Clove Pink, Carnation, or Clove Gilly-flower, *that is*, July flower).—*Flowers* solitary; *calyx scales* 4, broad, pointed, one-fourth as long as the calyx; *petals* notched; *leaves* linear, glaucous, with

smooth edges.—On old walls, but scarcely indigenous. Well known, both in the gardens of cottagers and of professed florists, where it is subject to countless varieties, all of which are fragrant and beautiful.—Fl. July. Perennial.



DIANTHUS ARMERIA (*Deptford Pink*).

4. *D. cæsius* (Mountain Pink).—*Flowers* mostly solitary; *calyx scales* 4, blunt, one-fourth as long as the calyx; *petals* jagged; *leaves* linear, glaucous, with rough edges.—Limestone Cliffs, Cheddar, Somersetshire. *Flowers* rose-coloured, fragrant.—Fl. July. Perennial.

5. *D. deltoídes* (Maiden Pink).—*Flowers* solitary; *calyx scales* usually 2, tapering to a point, half as long as the calyx; *petals* notched; *stem* and *leaves* roughish. —Gravelly banks, but not common. A much branched plant, with stems 6—12 inches high, and rose-coloured flowers with white spots, and a dark ring in the centre; scentless.—Fl. July, August. Perennial.

2. SAPONÁRIA (*Soapwort*).

1. *S. officinalis* (Common Soapwort).—A robust plant, 2—4 feet high, with broad, pointed, smooth, leaves, and handsome flesh-coloured flowers, which are often double. —It is generally found in the neighbourhood of cultivated ground, and is not considered a native.—Fl. August, September. Perennial.

3. SILÉNÉ (*Catchfly*).

* *Stems tufted, short; flowers solitary.*

1. *S. acaulis* (Moss Campion).—*Stem* much branched, tufted; *leaves* narrow, fringed at the base; *petals* crowned, slightly notched.—Confined to the summits of the loftiest British mountains, where it forms a densely matted turf, copiously decorated with bright purple flowers.—Fl. June, July. Perennial.

** *Stem elongated; flowers panicled; calyx inflated, bladder-like.*

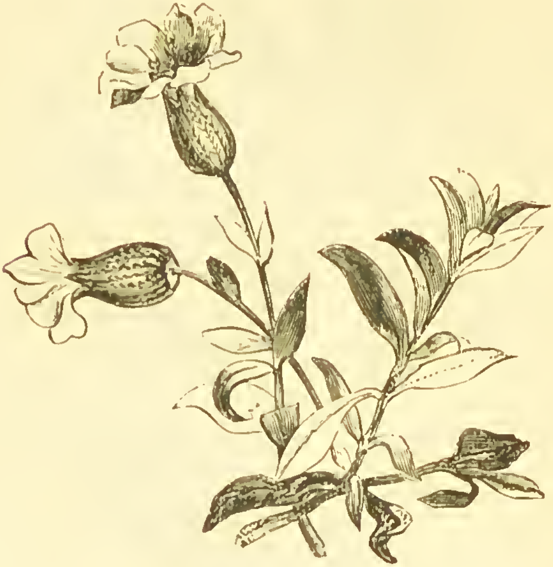
2. *S. infláta* (Bladder Campion).—*Stem* erect; *leaves* oblong, tapering; *flowers* panicled, drooping; *calyx* inflated, bladder-like, with a net-work of veins; *petals* deeply cloven, rarely crowned.—A common weed in

corn-fields and pastures, growing from 1 to 2 feet high, and well marked by its numerous white flowers and veined calyces, often tinged with purple. The foliage and stem are glaucous, and generally smooth; but a variety which is downy all over is occasionally found.—Fl. June—August. Perennial.

SAPONÁRIA OFFICINALIS (*Common Soapwort*).

3. *S. marítima* (Sea Campion).—*Stem* numerous from the same root, spreading; *leaves* oblong, taper-

ing, finely toothed at the margin; *flowers* few on each stem, or solitary; *petals* slightly cloven, crowned.—Resembling the last, but of humbler stature, though bearing larger flowers. Common near the sea-shore, as well as by the sides of mountain rivulets. A variety, with handsome double flowers, has been found in Devonshire.—Fl. all the summer. Perennial.



SILÉNÉ MARÍTIMA (*Sea Campion*).

*** *Stems elongated; flowers in whorls.*

4. *S. Otítes* (Spanish Catchfly).—*Stems* erect, with opposite, tufted branches; *stamens* and *pistils* on separate plants; *petals* narrow, entire, not crowned.—Sandy fields in the east of England. The stems are about a foot high, viscid at the middle; flowers small, yellowish.—Fl. July. Perennial.

**** *Stems elongated ; flowers in leafy clusters, alternate.*

5. *S. Ánglica* (English Catchfly).—Whole plant hairy and viscid ; *leaves* narrow, tapering ; *flowers* lateral, alternate, erect, the lower ones when in fruit reflexed ; *petals* crowned, slightly cloven.—Not uncommon in many parts of England, varying from 6 to 12 inches high, or more, according to soil. The flowers are inconspicuous and of a pinkish white hue.—Fl. all the summer. Annual.

***** *Stems panicled, leafy ; calyx not bladder-like.*

6. *S. nutans* (Nottingham Catchfly).—*Flowers* all drooping one way ; *branches* opposite, 3-forked ; *calyx* much swollen ; *petals* deeply cloven, crowned.—On limestone and chalk rocks ; not common. It grows about 1½ foot high, with large fragrant flowers, which expand in the evening.—Fl. June, July. Perennial.

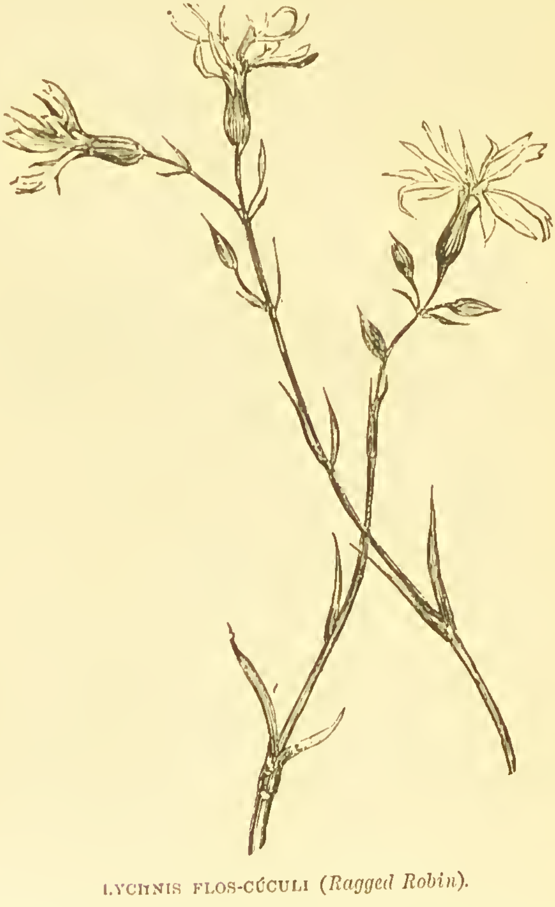
7. *S. cónica* (Striated Corn Catchfly).—*Stem* erect, forked ; *leaves* narrow, downy ; *petals* cloven, crowned ; *calyx* of the fruit conical, with 30 furrows.—In sandy fields, very rare ; from 6 to 12 inches high ; flowers small, reddish.—Fl. July. Annual.

8. *S. noctiflóra* (Night-flowering Catchfly).—*Stem* erect, repeatedly forked ; *calyx* with long teeth, oblong when in fruit, 10-ribbed.—Sandy and gravelly fields ; not common. Shorter than the last, and with larger flowers, which expand about sun-set, and close early in the morning, and are very fragrant during the night.—Fl. July. Annual.

4. LYCHNIS (*Campion*).

1. *L. Flos-Cúculi* (Ragged Robin).—*Petals* deeply 4-cleft, crowned ; *capsule* 5-toothed ; *leaves* very narrow ; *flowers* loosely panicled.—A pretty and well-known marsh plant, with a purplish green, angular stem, the lower part of which is roughish with short bristly hairs, the upper parts slightly viscid ; flowers rose-coloured,

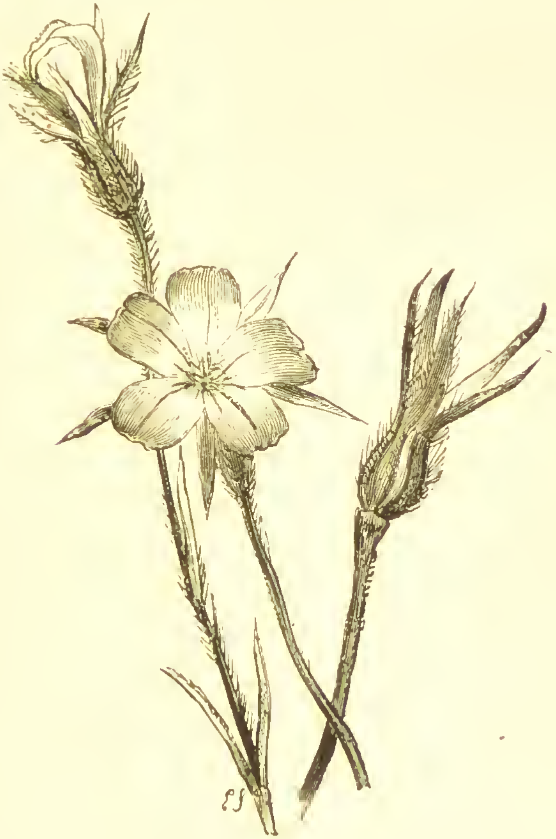
with deeply-cut narrow segments.—Fl. when the cuckoo is in full song, hence its Latin name, *Flos-Cúculi.* Perennial.



LYCHNIS FLOS-CÚCULI (*Ragged Robin*).

2. *L. diúrna* (Red Robin, or Campion).—*Stamens* and *pistils* on different plants ; *petals* 2-cleft half-way down, crowned ; *capsule* nearly globose 10-toothed, the teeth recurved ; *leaves* oblong, tapering, downy, as well as the stem.—An ornamental hedge plant, 2—3 feet high, with rose-coloured flowers.—Fl. all the summer. Perennial.

3. *L. vespertína* (Evening Campion).—*Stamens* and *pistils* on different plants; *petals* 2-cleft half-way down, crowned; *capsule* conical, 10-toothed, the teeth erect; *leaves* as in *L. diúrna.* Resembling the last, and in some districts equally common. The flowers are white, or sometimes reddish, fragrant in the evening.—Fl. all the summer. Perennial.



AGROSTEMMA (*Corn-Cockle*).

* Two other species of *Lychnis* are natives of Britain; *L. viscária* (Red German Catchfly), which is found in

Montgomeryshire and in a few places in Scotland, distinguished by its slightly-notched petals, 5-celled capsules, and clammy stem; and *R. alpína* (Red Alpine Campion), a much smaller species, 5—6 inches high, which grows on the summits of the Clova mountains.

5. AGROSTEMMA (*Corn-Cockle*).

1. *A. Githágo* (Corn-Cockle).—*Calyx* much longer than the corolla; *petals* undivided, destitute of a crown. —A common corn weed, with an upright downy stem, and large handsome purple flowers; seeds large, and consequently difficult to be separated from the corn with which they are threshed.—Fl. June, July. Perennial.

6. SAGÍNA (*Pearl-wort*).

* *Sepals, stamens, and styles*, 4.

1. *S. procumbens* (Procumbent Pearl-wort).—Perennial; *stems* prostrate, smooth; *leaves* pointed; *petals* much shorter than the calyx; *capsules* curved downwards before ripening.—Well known to gardeners as a troublesome weed infesting the paths, and so prolific as to require repeated eradication. The flowers are at all times inconspicuous; the stems are from 1 to 4 inches long.—Fl. all the summer. Perennial.

SAGÍNA PROCUMBENS, *and* S. APETALA.

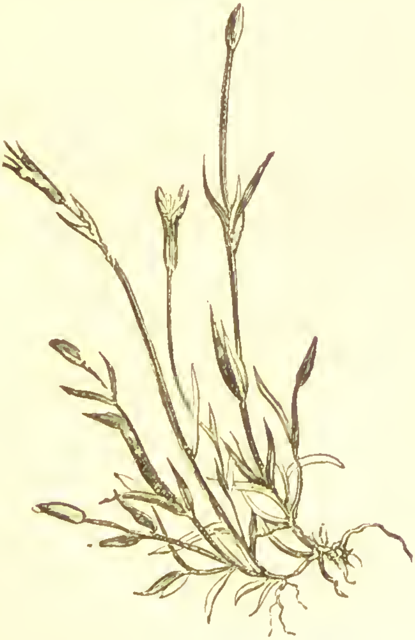
* Two other British species belong to this group, both

very like the preceding: *S. apétala* (Annual Pearl-wort), distinguished by its slight, hairy, erect stems, and fringed leaves; the capsules, too, are erect: and *S. marítima* (Sea Pearl-wort), which has blunt, fleshy leaves, and flowers destitute of petals.

** *Stamens* 10; *sepals, petals, and styles,* 5.

4. *S. nodósa* (Knotted Pearl-wort).—*Leaves* opposite, growing together at the base, upper ones very short, growing in knots; *flower-stalks* always erect; *petals* longer than the calyx.—Wet sandy places, not uncommon. A pretty little plant 3—4 inches high, with conspicuous white flowers, 2 or 3 together, and tufted leaves.

* *S. saginoídes* or *saxátilis* (Alpine Pearl-wort) and *S. subuláta* (Awl-shaped Pearl-wort), the former a native of the Scotch mountains, the latter not uncommon in

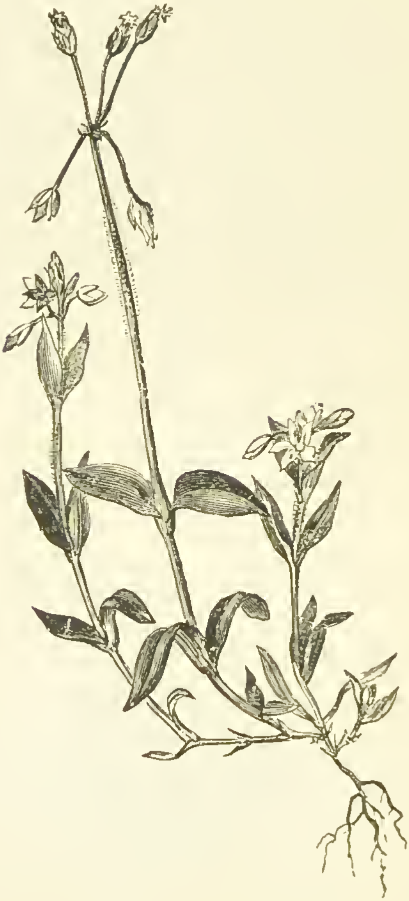


MŒNCHIA ERECTA (*Upright Mœnchia*).

gravelly pastures, have solitary flowers on long flower-stalks, and in habit approach very nearly to *Sagina procumbens.*

7. MŒNCHIA.

1. *M. erecta* (Upright Mœnchia).—A small upright



HOLOSTEUM UMBELLATUM (*Umbelliferous Jagged Chickweed*).

plant 2—4 inches high, with rigid glaucous *leaves*, and white *flowers*, which are large in proportion to the rest of the plant ; the *sepals* are sharp pointed, with a white membranous edge ; the *petals* expand only in the sunshine.—Fl. May. Annual.

8. Holósteum (*Jagged Chickweed*).

1. *H. umbellatum* (Umbelliferous Jagged Chickweed). —A singular little plant, 4—5 inches high, with leafy *stems* which are smooth below, and hairy and viscid between the joints above. The *flowers* grow in terminal umbels about 5 together, and are bent back after flowering ; *petals* white, with a reddish tinge.—Very rare, on old walls at Norwich and elsewhere.—Fl. April. Annual.

9. Stellaria (*Stitchwort*).

1. *S. média* (Chickweed).—*Leaves* egg-shaped, with a short point ; *stems* with a hairy line alternating from side to side ; *petals* deeply 2-cleft, not longer than the sepals ; *stamens* 5—10.—Roadsides, waste places, and as a weed in gardens ; abundant. *Leaves* succulent ; *flowers* small, white. Well distinguished by a hairy line which runs up one side of the stem and when it reaches a pair of leaves is continued on the opposite side.—Fl. all the year round. Annual.

2. *S. Holóstea* (Greater Stitchwort, Satin-flower, or Adder's meat).—*Stem* nearly erect, angular, rough-edged ; *leaves* very narrow, tapering to a long point, minutely fringed ; *petals* deeply 2-cleft, twice as long as the sepals.—Among the most ornamental of our early summer flowers, scarcely less conspicuous with its delicate green leaves than its snow-white petals. The stems do not die down to the ground in the winter, as is the case with most other herbaceous perennials ; but though dead to all appearance, they send out delicate green tufts very early in the year, so that the flowering stems, especially

inbushy places, seem to have made an unusually rapid growth.—Fl. May, June. Perennial.

3. *S. gramínea* (Lesser Stitchwort).—*Stem* nearly erect, angular, smooth; *leaves* very narrow, acute, smooth, edged; *flowers* in forked panicles; *petals* very deeply cleft, scarcely longer than the 3-nerved sepals.—Dry heathy places. Much smaller than the preceding in all its parts, and distinguished at once by the very deeply divided petals, which are white, but not so showy.—Fl. June, July. Perennial.

STELLARIA HOLÓSTEA (*Greater Stitchwort*).

4. *S. glauca* (Glaucous Marsh Stitchwort).—*Stem* nearly erect, angular, smooth; *leaves* narrow, tapering, entire, glaucous; *flowers* solitary on long axillary stalks; *petals* very deeply 2-cleft, much longer than the 3-nerved sepals.—Marshy places. Resembling the preceding in habit, 6—12 inches high, but with larger flowers.—Fl. June—August. Perennial.

5. *S. uliginósa* (Bog Stitchwort).—*Stems* spreading, angular; *leaves* broadly lanceolate, with a stiff tip, smooth; *flowers* panicled; *petals* deeply 2-cleft, shorter than the 3-nerved sepals, which are united at the base.—Boggy places, frequent. A slender plant, about a foot long, with very small white flowers.—Fl. June. Annual.

* The other British species of *Stellaria* are *S. némorum* (Wood Stitchwort), which grows in woods in the north, and is distinguished by its heart-shaped leaves: *S. cerastoídes* (Alpine Stitchwort), a humble plant 4—6

HONCKÉNYA PEPLOIDES (*Sea Purslane*).

inches high, with large white flowers, growing on th Scottish mountains: and *S. scapígera* (Many-stalked Stitchwort), distinguished by its long flower-stalks, and growing both on the Scottish mountains north of Dunkeld, and about Loch Nevis.

10. Honckénya (*Sea Purslane*).

1. *H. peploídes* (Sea Purslane).—*Leaves* sessile, egg-shaped, acute, fleshy, smooth; *sepals* obtuse.—A low, succulent, marine plant, with creeping roots, forked stems, and leaves arranged in four rows. The flowers are small and white, and grow from the forks of the stem. The plant forms tangled masses on the sea-shore, and approaches in habit the Sea Milkwort (*Glaux marítima*).—Fl. July. Perennial.

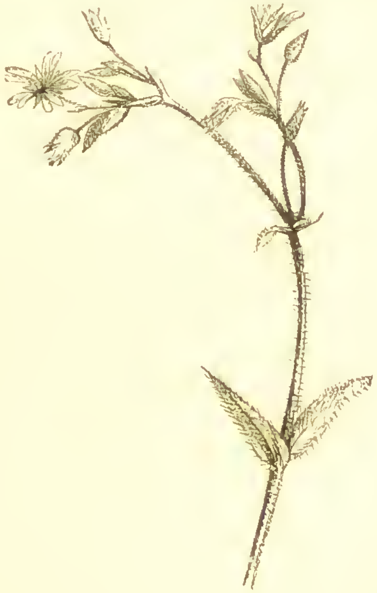
11. Arenaria (*Sandwort*).

1. *A. trinervis* (Three-nerved Sandwort).—*Leaves* egg-shaped, acute, the lower ones stalked, 3—5-nerved, fringed; *flowers* solitary from the forks of the stem and axils; *sepals* 3-nerved, the central nerve rough.—A weak, straggling, downy plant, about a foot long, approaching the Chickweed (*Stellaria média*) in habit, from which, however, it may be at once distinguished by its undivided petals.—Fl. May, June. Annual.

2. *A. serpyllifolia* (Thyme-leaved Sandwort).—*Leaves* broadly egg-shaped, pointed, roughish, sessile; *stem* repeatedly forked, downy; *sepals* tapering, hairy.—A small shrub-like herb 2—6 inches high, with inconspicuous white flowers, common on dry banks and walls. When growing near the sea, the stems are less branched, and the leaves somewhat larger and more decidedly fringed.—Fl. June—August. Annual.

* To this group belong also *A. ciliata* (Fringed Sandwort), a small species growing on limestone mountains in Ireland; *A. Norvégica* (Norwegian Sandwort), discovered

in the Shetland Islands, in 1837; *A. verna* (Vernal Sandwort), a small tufted plant with awl-shaped leaves, and comparatively large flowers, which grows in several parts of Scotland, and at the Lizard Point, Cornwall: *A. rubella* (Alpine Sandwort), a very rare species, confined to the summits of some of the Scotch mountains: *A. tenuifolia* (Fine-leaved Sandwort), a slender plant 4—6 inches high, with smooth forked stems and awl-shaped leaves, found in sandy fields in various parts of England and Scotland: and *A. fastigiata* (level-topped Sandwort), a rare Scotch species, with tufted flowers and leaves.



CERÁSTIUM VISCOSUM (*Viscid Mouse-ear Chickweed*).

12. CERASTIUM (*Mouse-ear Chickweed*).

* *Petals not longer than the calyx.*

1. *C. viscósum* (Viscid Mouse-ear Chickweed).—*Stems* hairy, viscid; *leaves* oblong, tapering; *flowers* in pani-

cles.—A common weed, with inconspicuous white flowers and straggling stems, which are generally covered with dust. The seed-vessels, when ripening, lengthen and become curved.—Fl. all the summer. Perennial.

* To this group belong *C. vulgátum* (Broad-leaved Mouse-ear Chickweed), which may be distinguished by its flowers being tufted: *C. semidecandrum* (Five-stamened Mouse-ear Chickweed), distinguished by the character to which it owes its name: *C. tetrandrum* (Four-stamened Mouse-ear Chickweed), distinguished in like manner: and several others to which botanists have given names, though undecided whether to call them species or varieties.

** *Petals longer than the calyx.*

2. *C. arvense* (Field Mouse-ear Chickweed).—*Leaves* narrow, tapering, downy: *petals* twice as long as the sepals.—Gravelly and chalky fields; common.—Fl. June, July. Perennial.

* To this group belong also *C. alpínum* (Alpine Mouse-ear Chickweed), a short plant with white silky leaves and large white flowers, frequent in the Highlands of Scotland: and *C. latifolium* (Broad-leaved Mouse-ear Chickweed), also a mountain plant, distinguished from the preceding by its leaves being covered with yellowish down, and by its solitary flowers. It is found on the mountains of Wales and Scotland.

13. MALÁCHIUM (*Mouse-ear Chickweed*).

1. *M. aquáticum* (Water Mouse-ear Chickweed).—*Lower leaves* stalked, *upper* sessile, heart-shaped, tapering to a point, all hairy on the margin; *capsule* opening with 5 2-cleft teeth.—A much branched straggling plant, with white flowers in the angles of the stems, and in habit approaching *Stellaria némorum* (Wood Stitchwort).—Wet places, but not general.—Fl. July, August. Perennial.

14. CHERLERIA (*Cyphel*).

1. *C. sedoídes* (Mossy Cyphel).—A mountain plant with long roots and numerous densely tufted stems, which scarcely rise above the ground, bearing crowded narrow leaves and solitary greenish flowers, which are generally without petals.—Highland mountains.—Fl. June—August. Perennial.

CHERLERIA SEDOÍDES (*Mossy Cyphel*).

ORD. XV.—LINACEÆ.—THE FLAX TRIBE.

Sepals 3—5, overlapping when in bud, persistent; *petals* equal in number to the sepals, twisted when in bud, falling off very soon after expansion; *stamens* equal in number to the petals, and alternate with them, united at the base into a ring with small teeth between them; *ovary* of about as many cells as there are sepals, and as many *styles*; *capsule* approaching a globular form, tipped with the hardened base of the styles, each cell incompletely divided by a partition extending from the back inwards; *seeds* 1 in each imperfect cell, pendulous.—Herbaceous, rarely shrubby, plants, with undivided leaves and remarkably fugacious petals, principally but not exclusively confined to Europe and the north of Africa. The flowers are in many cases highly ornamental, but the most striking feature of the Flax tribe is the toughness of the fibre contained in their stems, and the mucilaginous qualities of their seeds, which also yield considerable quantities of oil. One species, *Linum usitatissimum*, has for ages supplied the valuable article of clothing which takes its name, "Linen," from the plant which produces it; linseed-oil is obtained from the seeds of the same plant, and the meal of the seeds is valuable for poultices.

1. Linum (Flax).—*Sepals* 5; *petals* 5; *capsule* 10-valved, and 10-celled. (Name from the Celtic *Lin*, thread.)

2. Radíola (Flax-seed).—*Sepals* 4, connected below, 3-cleft; *petals* 4; *capsule* 8-valved, and 8-celled. ("Named from *radius*, a ray, I presume in consequence of the ray-like segments of the calyx."—*Sir W.J.Hooker.*)

1. Linum (*Flax*).

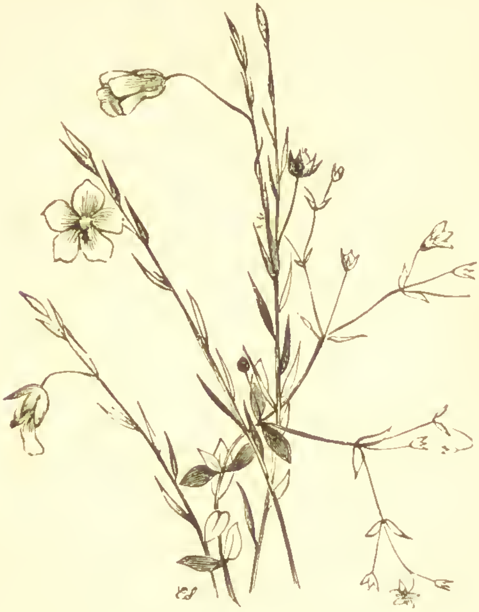
* *Leaves alternate.*

1. *L. perenne* (Perennial Flax).—*Leaves* very narrow, tapering to a sharp point; *sepals* inversely egg-shaped, obtuse, obscurely 5-ribbed.—Chalky fields.—A slender plant about a foot high, with wiry stems, very narrow sessile leaves, and elegant sky-blue petals, which are so fugacious as scarcely to bear being gathered.—Fl. June, July. Perennial.

2. *L. angustifolium* (Narrow-leaved Flax).—*Leaves* very narrow, tapering to a point; *sepals* elliptical, pointed, 3-ribbed.—Sandy pastures in the southern and western counties; common. Like the last, but distinctly marked by its sharp-pointed sepals, and lighter blue flowers.—Fl. June, July. Perennial.

* To this group belongs *L. usitatissimum*, the flax of commerce, which, though not a native plant, is not unfrequently found in cultivated ground. It is distin-

guished from the preceding by its somewhat broader and more distant leaves, by its stems being mostly solitary, instead of several from the same root, by its notched petals, and by its larger size.



LINUM ANGUSTIFOLIUM, *and* L. CATHARTICUM.

** *Leaves opposite.*

3. *L. cathárticum* (Cathartic Flax).—*Leaves* oblong, broader at the base; *sepals* pointed.—Dry pastures; abundant.—Very different in size and habit from any of the preceding, rarely exceeding 6 inches in height, and bearing numerous small white flowers, which grow in panicles, and droop before expansion.—Fl. June, July. Annual.

2. Radíola (*Flax-seed*).

1. *R. millegrána* (Thyme-leaved Flax-seed).—The only species.—One of the most minute of British flowering plants, never exceeding three inches in height, but repeatedly forked, and bearing a large number of small white flowers, which, as the plants generally grow many together, often prevent its being overlooked.—Damp heaths; not uncommon.—Fl. July, August. Annual.

RADÍOLA MILLEGRÁNA (*Thyme-leaved Flax-seed*).

Ord. XVI.—MALVACEÆ.—The Mallow Tribe.

Sepals 5, more or less united at the base, valvate in bud, often enclosed in an outer calyx; *petals* equalling the sepals in number, twisted when in bud; *stamens* numerous, united by their filaments into a tube; *ovary* formed of several carpels united in a radiate manner; *styles* equal in number to the carpels, either distinct or united; *capsules* (in all the British species) 1-seeded, arranged in a whorl round the styles. —A large and important family of herbaceous plants, shrubs, and trees, with divided alternate leaves, which are furnished with stipules and axillary flowers. They are most abundant in the tropical regions, where they form a large proportion of the vegetation, and gradually decrease in number towards the poles. According to Lindley, the number of species hitherto discovered amounts to about a thousand, all of which agree in containing a large quantity of mucilage, and being totally destitute of unwholesome qualities. In some species, this mucilage, extracted by boiling the plant, especially the root, is employed medicinally in allaying irritation, both external and internal. Some few are used as food. The bark of others affords an excellent substitute for hemp. The cotton of commerce is obtained from the appendage of the seeds of several species of Gossypium, a family belonging to this Order. As ornamental garden flowers, Malópé, several species of Hibiscus, and the Hollyhock, are well known. The number of stove species in cultivation is very great.

1. MALVA (Mallow).—*Styles* numerous; *outer calyx* 3-leaved, *inner* 5-cleft. (Name from the Greek *malaké*, soft, from the emollient properties of the mucilage which it contains.)

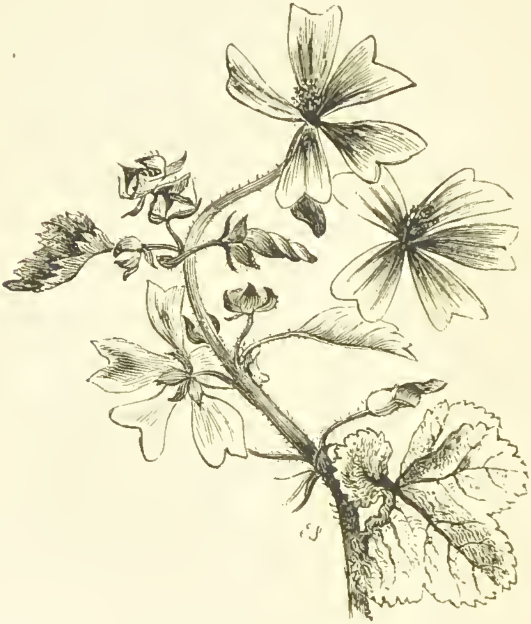
2. LAVATÉRA (Tree-Mallow).—*Styles* numerous; *outer calyx* 3-lobed, *inner* 5-cleft. (Named in honour of the two *Lavaters*, friends of Tournefort.)

3. ALTHÆA (Marsh-Mallow).—*Styles* numerous; *outer calyx* 6—9 cleft. (Name from the Greek *áltho*, to cure, from its healing properties.)

1. MALVA (*Mallow*).

1. *M. Sylvestris* (Common Mallow).—*Stem* ascending, or erect; *root-leaves* kidney-shaped, with 7 acute lobes; *fruit-stalks* erect; *fruit* not downy, wrinkled.—Roadsides and waste ground; common. A robust herbaceous plant, with large downy, lobed, but not deeply divided leaves, branched stems, and showy purple flowers. When the flowers first expand the plant is handsome, but as

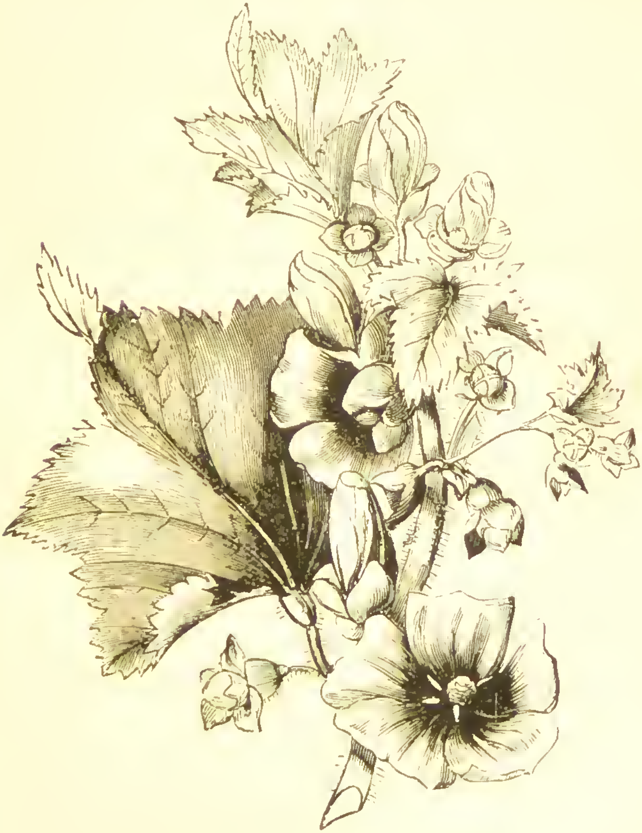
the season advances, the leaves lose their deep green hue, and the stems put on a ragged appearance. The whole plant is mucilaginous and emollient. The pollen is a beautiful object for the microscope, being (like that of many other plants in this Order) globular, and studded with minute glandular prickles.—Fl. June—August. Perennial.



MALVA SYLVESTRIS (*Common Mallow*).

2. *M. rotundifolia* (Dwarf-Mallow).—*Stem* prostrate: *leaves* roundish, heart-shaped, with 5 shallow lobes: *fruit-stalks* bent down; *fruit* downy.—Waste places; not uncommon. Smaller than the last, and distinguished at once by its prostrate stems, and pale lilac flowers.—Fl. June—September. Annual.

3. *M. moschàta* (Musk-Mallow).—*Stem* erect; *root-leaves* kidney-shaped, deeply 5 or 7-lobed and cut; *stem-leaves* deeply 5-lobed, and variously cut into numerous narrow segments; *outer calyx-leaves* very narrow; *fruit* hairy.—Hedges and borders of fields; not uncommon. Whole plant hairy, light green, with large handsome rose-coloured flowers, which are crowded towards the summit of the stem; the foliage emits a faint musky



LAVATÉRA ARBÓREA (*Tree Mallow*)

I

odour, especially in hot weather, or when drawn lightly through the hand. A white variety is not uncommon in gardens.—Fl. July, August. Perennial.

* The above species agree in yielding a plentiful tasteless mucilage, which, in some rural districts, is highly valued for making poultices and cough mixtures. Children often amuse themselves with gathering and eating the unripe seed-vessels, which they call "cheeses:" they are insipid, but not unwholesome. The common Mallow is frequently called by country people, "Marsh-Mallow," a name which properly belongs to *Althæa officinális.*

2. LAVATÉRA (*Tree-Mallow*).

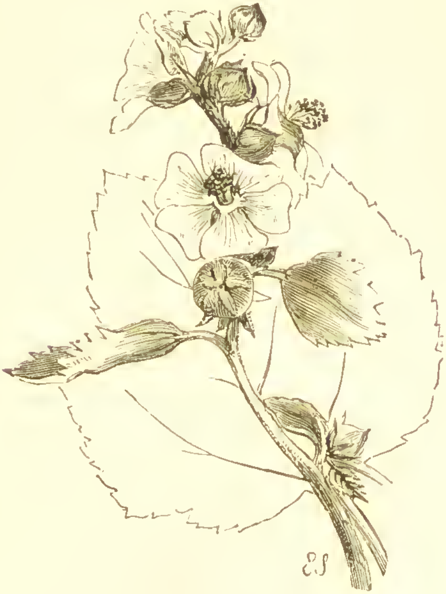
1. *L. arbórea* (Sea Tree-Mallow).—A tall and handsome plant, 6—12 feet high, with a thick, almost woody, stem; soft, downy, angular leaves, and abundance of purple flowers, resembling those of the Common Mallow, but somewhat smaller, and of a deeper colour towards the centre.—On sea-cliffs and insulated rocks on many parts of the coast.—Fl. July—October. Biennial.

3. ALTHÆA (*Marsh-Mallow*).

1. *A. officinális* (Common Marsh-Mallow).—*Leaves* 3—5 lobed, soft and downy on both sides; *flowers* several together.—Marshes, especially near the sea. Readily distinguished from any others of the Mallow tribe growing in Britain, by the numerous divisions of the outer calyx, by the hoary down which thickly clothes the stems and foliage, and by the numerous panicles of blush-coloured flowers. The starry down is a beautiful object for the microscope.—Fl. August, September. Perennial.

* A second species of *Althæa, A. hirsúta* (Hispid Marsh-Mallow), occurs in considerable abundance near Cobham, Kent, but is not considered a native. It may

be distinguished by its bristly stems and leaves, and by its flowers being solitary in the axils of the upper leaves.



ALTHÆA OFFICINÁLIS (*Common Marsh-Mallow*).

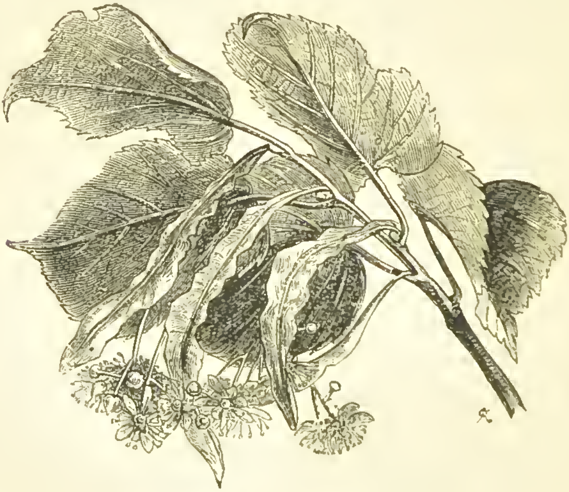
Ord. XVII.—TILIACEÆ.—The Lime Tribe.

Sepals 4 or 5, valvate when in bud ; *petals* equalling the sepals in number, often with a little pit at the base, sometimes wanting ; *stamens* numerous ; *glands* 4—5, at the base of the petals ; *ovary* single, of 2—10 united, rarely distinct, *carpels ; style* 1, with as many *stigmas* as carpels ; *capsule* with one or more seeds in each cell. —The plants belonging to this natural order are mostly trees or shrubs. They have all a mucilaginous, wholesome juice, and many of them are remarkable for the toughness of the fibres of the inner bark. In a species of *Aristotelia* this is so strong, as to be converted into strings for musical instruments. One genus (*Córchorus*) supplies the Indians with fishing-lines and nets; and the Lime or Linden-tree furnishes the material of which in Russia, bast mats are made. Some genera produce edible berries, and the bony seeds of others are not uncommonly set in gold, and form handsome necklaces. In several instances the timber is employed for the most useful purposes. The name of the order is derived from *Tilia*, the Linden-tree, the only British genus.

1. Tilia (Lime).—*Sepals* 5, soon falling off; *petals* 5, with or without a scale at the base outside; *ovary* 5-celled; *style* 1; *capsule* 1-celled not opening by valves, 2-seeded. (Name of uncertain origin.)

1. Tília (*The Lime or Linden-tree*).

1. *T. parvifolia* (Small-leaved Lime-tree).—*Leaves* obliquely heart-shaped, smooth on both sides, with the



Tília Europæa (*Common Lime-tree*).

exception of small tufts of downy hair beneath, scarcely longer than their stalks; *peduncles* springing from a leafy *bract*, many flowered; *capsule* brittle.—Peculiar interest attaches to the Linden-tree, from its having given a name to the immortal Linnæus. For a fuller account of this tree, the reader is referred to "The Forest Trees of Britain," vol. ii.—Fl. July. Tree.

* It is questionable whether any species of Lime is indigenous in Britain; that just described has the best claim to be considered a native, but is not so well known as *T. Europæa*, the common Lime of avenues and parks. This species has flowers like those of the small-leaved Lime, but larger leaves, and a smooth capsule the rind of which is tough. *T. grandifolia* (Large-leaved Lime-tree) has woody seed-vessels, which, as well as the leaves, are covered with short down.

ORD. XVIII.—HYPERICACEÆ.—THE ST. JOHN'S WORT TRIBE.

Sepals 4 or 5, not falling off, unequal, often fringed with black dots; *petals* of the same number as the sepals, unequal-sided, twisted when in bud, often bordered with black dots; *stamens* numerous, free above, united at the base into three or more sets; *ovary* single; *styles* 3—5; *fruit* a capsule or berry of several valves and cells, the *valves* curved inwards; *seeds* minute, numerous.—Herbs, shrubs, or trees, generally with opposite leaves marked with pellucid dots, and yellow flowers, inhabiting most parts of the world. Most of the species are aromatic and resinous, and some contain a yellow juice, which has been used in medicine. The only British genus strictly belonging to this order is that which gives it its name, *Hypéricum*. The curious genus *Parnassia* was formerly placed here, but is now removed to the Order DROSERACEÆ (p. 79).

1. HYPÉRICUM (St. John's Wort).—*Sepals* 5; *petals* 5; *stamens* numerous; *filaments* united into 3 or 5 sets;

styles 3 or rarely 5; *capsule* 3-celled.—(Name, *hypericon*, the Greek name of the plant.)

1. Hypéricum (*St. John's Wort*).

* *Styles* 5.

1. *H. calycínum* (Large-flowered St. John's Wort).—*Stems* single-flowered.—A low shrub, with oblong, blunt leaves and large yellow flowers, which are very handsome, especially before the anthers have shed their pollen. Common in gardens and shrubberies, and naturalized in several places.—Fl. July—September. Perennial.

** *Styles* 3, *sepals not fringed.*

2. *H. Androsæmum* (Common Tutsan).—*Stem* shrubby, two-edged; *leaves* egg-shaped, sessile; *sepals* unequal; *capsule* berry-like.—Woods and hedges, but not common, except in Devon and Cornwall. A handsome shrubby plant, 2—3 feet high, conspicuous with clusters of largish yellow flowers, and afterwards with glossy, berry-like capsules. The leaves have a strong resinous smell, which they retain for some time after drying.—Fl. July. Perennial. Shrub.

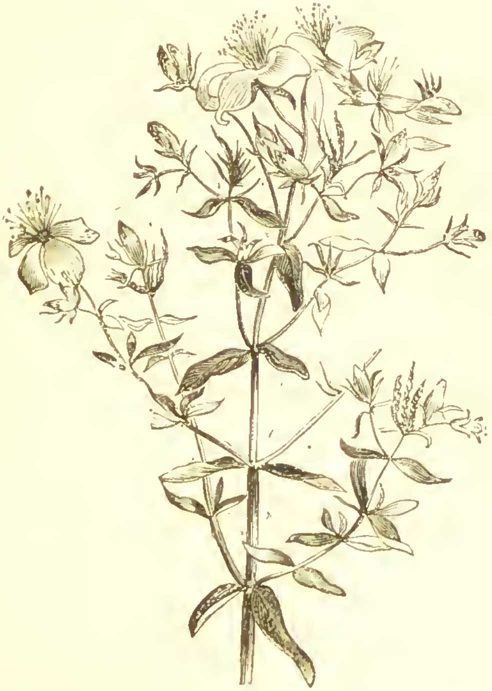
3. *H. quadrángulum* (Square-stalked St. John's Wort).—*Stem* herbaceous, erect, with 4 somewhat winged angles, branched; *leaves* oblong, egg-shaped, with pellucid dots; *sepals* erect, lanceolate.—Wet places, common, growing 1—2 feet high, with flat panicles of yellow flowers.—July, August. Perennial.

4. *H. perforátum* (Perforated St. John's Wort).—*Stem* herbaceous, erect, 2-edged; *leaves* elliptic-oblong, copiously perforated with pellucid dots; *sepals* erect, lanceolate, acute.—Woods and hedges, common; easily distinguished from all the other smaller species of St. John's Wort by its decidedly 2-edged stem; 2 feet high.—Fl. July, August. Perennial.

5. *H. dúbium* (Imperforate St. John's Wort).—*Stem* herbaceous, erect, 4-sided, with rounded angles; *leaves*

destitute of dots; *sepals* reflexed, elliptical, blunt.—Mountainous places, not common; very like the last, but well distinguished by the above characters.—Fl. July, August. Perennial.

6. *H. humifúsum* (Trailing St. John's Wort).—*Stems* prostrate, somewhat 2-edged; *leaves* oblong, obtuse, perforated with pellucid dots; *flowers* somewhat cymose; *stamens* not more than 15.—Walls and gravelly banks, common; 3—9 inches long, with several spreading slender stems and yellow flowers, which open most freely in the sunshine. Though usually placed in this group, the sepals are often fringed with black dots.—Fl. July, August. Perennial.



HYPERICUM PERFORATUM (*Perforated St. John's Wort*).

*** *Styles* 3. *Sepals fringed with glands.*

7. *H. montánum* (Mountain St. John's Wort).—*Stem* erect, round, smooth ; *leaves* oblong, sessile, smooth, with glandular dots near the margin ; *sepals* acute, fringed with shortly stalked glands.—Limestone hills, not uncommon ; growing about 2 feet high, and remarkable for the black fringe of its sepals, which at once distinguishes it from any of the preceding species.—Fl. July. Perennial.

8. *H. hirsútum* (Hairy St. John's Wort).—*Stem* erect, nearly round, downy ; *leaves* downy.—Woods, especially in a chalky or limestone soil ; about the same size as the last, but well marked by its downy herbage.—Fl. July. Perennial.

9. *H. pulchrum* (Small upright St. John's Wort).—*Stem* erect, round, smooth ; *leaves* heart-shaped, embracing the stem, smooth ; *sepals* obtuse, fringed with sessile glands ; *petals* fringed with glands.—Heaths and woods, common. A slender plant, with scanty foliage and golden-yellow flowers, which when in bud are stained externally with red.—Fl. July, August. Perennial.

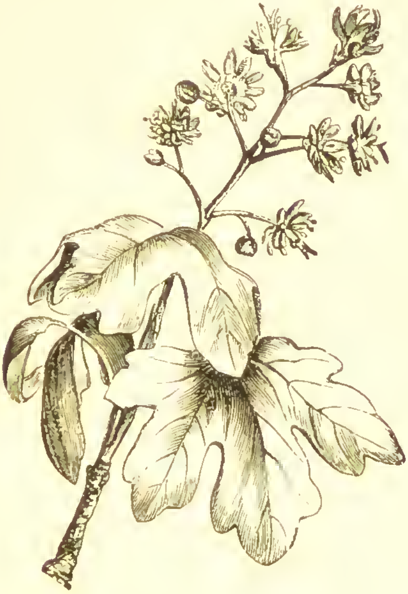
10. *H. elódes* (March St. John's Wort).—*Stem* creeping ; *branches* erect ; *leaves* roundish, and, like the stems, densely clothed with shaggy down.—Spongy bogs, common. Flowers few, pale yellow, remaining open but a short time. The plant may be detected at some distance by the hoariness of its foliage, and by the strong and far from pleasant resinous odour which it emits, especially in hot weather.—Fl. July, August. Perennial.

* The other British species of St. John's Wort are, *H. maculátum* (Spotted St. John's Wort), which grows in wet places, and may be distinguished from *H. quadrángulum* by its reflexed toothed *sepals*, and by purple streaks and dots on the *petals* beneath : *H. linariifolium* (Narrow-leaved St. John's Wort), which is nearly allied to *H. humifúsum*, but has erect *stems*, and about 30 *stamens*, found on the sea-coast of Devon and Cornwall, very rare ; and *H. barbatum* (Bearded St. John's Wort),

a doubtful native, but said to grow wild in Perthshire ; it has *sepals* fringed with long-stalked *glands*, and *petals* minutely fringed and dotted.

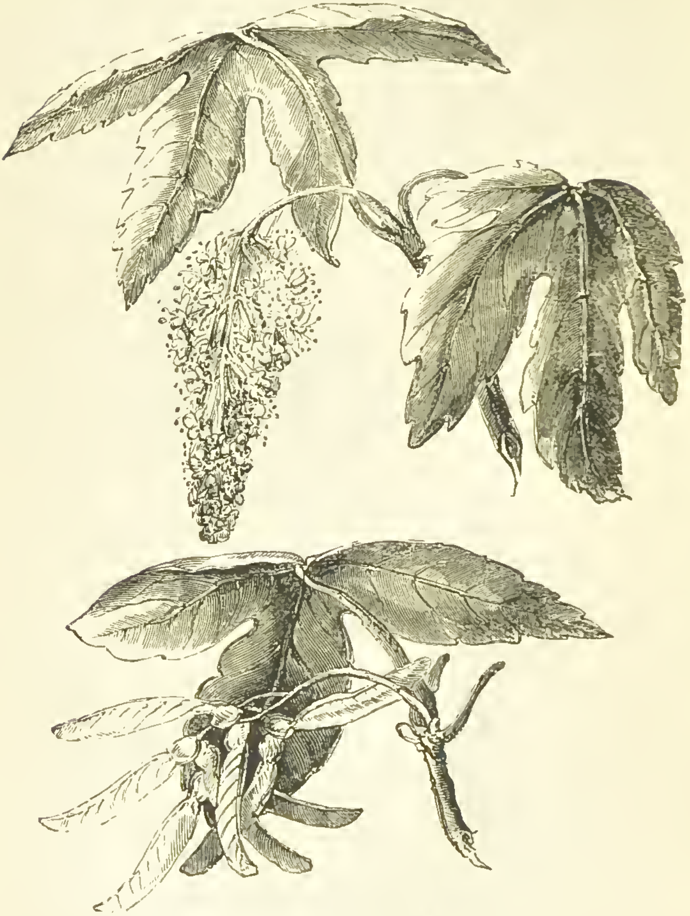
ORD. XIX.—ACERACEÆ.—THE MAPLE TRIBE.

Calyx divided into 5 parts (occasionally 4—9) ; *petals* of the same number ; *stamens* about 8, inserted on a flattened ring beneath the ovary ; *ovary* 2-lobed ; *style* 1 ; *stigmas* 2 ; *fruit* 2-lobed, 2-celled, not bursting ; *lobes* winged on the outside ; *cells* 1—2 seeded.—Trees with opposite, stalked leaves, which are veined in a palmate manner. They are found only in the temperate regions of the northern hemisphere ; several species abound in a sweet juice, which in North America is



ACER CAMPESTRE (*Common Maple*).

manufactured into sugar.—(See "Forest Trees of Britain," vol. i. p. 103.)



ACER PSEUDO-PLATANUS (*Greater Maple or Sycamore*).

1. ACER (Maple).—*Calyx* 5-cleft; *petals* 5; *capsules* 2, each furnished with a long wing.—(Name from the Celtic *ac*, a point, on account of the hardness of the

wood, which was used for making spears and other sharp-pointed instruments.

1. ACER (*Maple*).

1. *A. campéstré* (Common Maple).—*Leaves* 5-lobed; *lobes* bluntish, scarcely cut; *clusters* of flowers erect.—Woods and hedges; a small tree, with a very rugged corky bark, full of deep cracks.—Fl. May, June. Tree.

2. *A. Pseudo-plátanus* (Greater Maple or Sycamore).—*Leaves* 5-lobed; *lobes* unequally serrated; *clusters* of flowers drooping.—A large and handsome tree, introduced into England before the fourteenth century, and now completely naturalized.. The name Sycamore was given to it by the older botanists, who erroneously believed it to be identical with the *Sycamore* or *Mulberry-fig* of Palestine, which it somewhat resembles in the size and form of its leaves.—Fl. May. Tree.

ORD. XX.—GERANIACEÆ.—GERANIUM TRIBE.

Sepals 5, not falling off, ribbed, overlapping when in bud; *petals* 5-clawed, twisted when in bud; *stamens* 10, sometimes alternately imperfect, generally united by their filaments; *ovary* of 5 carpels placed round a long awl-shaped *beak*; *styles* 5, united to the beak; *stigmas* 5; *fruit* beaked, separating into 5 *capsules*, each of which is one-seeded, and terminates in the hardened style, which finally separates at the base and curls up, carrying the capsule with it.—An extensive tribe, consisting of herbaceous plants and shrubs with an aromatic or resinous flavour and astringent qualities, abounding at the Cape of Good Hope and in the temperate regions of the northern hemisphere. To the genus *Pelargonium* belong the innumerable varieties of handsome flowering plants which under the name of *Geraniums* are so ornamental as greenhouse or window flowers. The roots of one or two species are eatable, and some are used in medicine.

1. GERÁNIUM (Crane's-bill).—*Stamens* 10, 5 of which are alternately larger and have glands at the base; *fruit* beaked, separating into 5 *capsules*, each with a long *awn* which is naked (not bearded on the inside).—(Name from the Greek *géranos*, a crane, to the beak of which bird the fruit bears a fancied resemblance.)

2. ERÓDIUM (Stork's-bill).—*Stamens* 10, of which 5 are imperfect; *glands* 5, at the base of the perfect stamens; *fruit* beaked, separating into 5 *capsules*, each with a long spiral *awn*, which is bearded on the inside. (Name from the Greek *erōdion*, a heron, to the beak of which bird the fruit bears a fancied resemblance.)

1. GERANIUM (*Crane's-bill*).

* *Flower-stalks single flowered.*

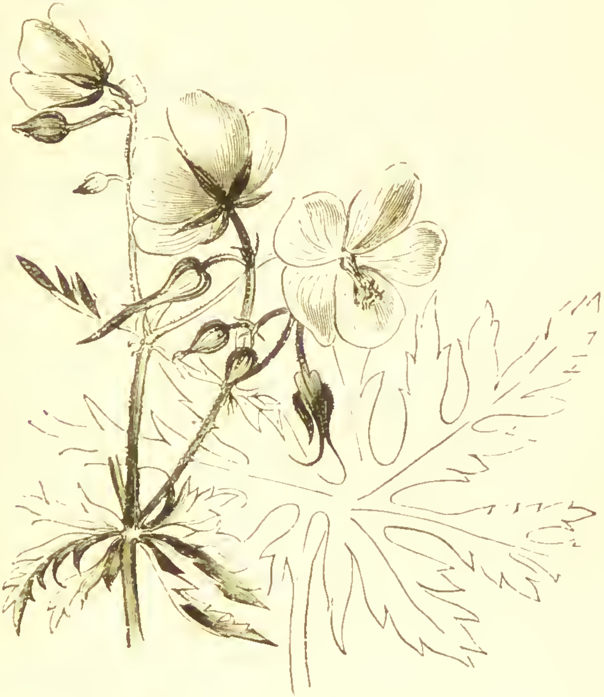
1. *G. sanguíneum* (Bloody Crane's-bill).—*Root-leaves* nearly round, with 7 deeply cut lobes, each of which is 3-cleft, *stem-leaves* 5 or 3-lobed.—Limestone and magnesian rocks, not common. An exceedingly handsome plant with hairy stems, abundant foliage, and large, bright purple flowers. Fl. July—September. Perennial.

** *Flower-stalks 2 flowered.*

2. *G. phæum* (Dusky Crane's-bill).—*Stem* erect; *flowers* panicled; *sepals* slightly pointed; *capsules* keeled, hairy below, wrinkled above.—In woods and thickets, rare, but not an uncommon garden plant; remarkable for the dingy, almost black hue of its flowers. Fl. May, June. Perennial.

3. *G. pratensé* (Meadow Crane's-bill).—*Stem* erect; *leaves* palmate, 7-lobed; *lobes* cut and serrated; *stamens* smooth, tapering from a broad base; *capsules* hairy all over; *fruit-stalks* bent down.—The largest British species, growing in moist pastures; about 2 feet high, with large and handsome purplish-blue flowers. Fl. June—August. Perennial.

4. *G. sylváticum* (Wood Crane's-bill).—*Stem* erect, many flowered; *leaves* palmate, 7-lobed; *lobes* cut and serrated; *stamens* awl-shaped, fringed: *capsules* keeled, hairy; *fruit-stalks* erect.—Woods and pastures, chiefly in the north, rare. Distinguished from the last by its smaller size, by its stamens being fringed half-way up, and by its capsules being most hairy about the keel. —Fl. June, July. Perennial.



GERÁNIUM PRATÉNSÉ (*Meadow Crane's-bill*).

5. *G. Pyrenáicum* (Mountain Crane's-bill).—*Stem* spreading, downy; *root-leaves* kidney-shaped, 5—7

lobed; *lobes* oblong, obtuse, 3-cleft and toothed at the end; *petals* notched, twice as long as the pointed sepals. —Road-sides and meadows; not common. 2—3 feet high. Well distinguished by the thick down on its stems and leaves, and by its numerous, rather small, purple flowers with cleft petals.—Fl. June, July. Perennial.

6. *G. Robertianum* (Herb Robert).—*Stem* spreading; *leaves* ternate or quinate; *leaflets* deeply cut, the segments with minute points; *sepals* angular, hairy; *capsules* wrinkled and hairy.—Road-sides and hedges: very common. One of the most generally diffused and best-known species, well distinguished by its red, hairy, succulent stems, and leaves which towards autumn acquire the same hue, and by its elegantly veined bright purple flowers. The scent of the whole plant is strong and unpleasant. Fl. all the summer. Annual.

7. *G. lúcidum* (Shining Crane's-bill).—Smooth and glossy. *Leaves* nearly round, 5-lobed; *sepals* angular and wrinkled; *capsules* with 3 keels, wrinkled.—Walls and stony places; in many places. A beautiful little species, a few inches high, with small, rose-coloured flowers, and shining stems and leaves, which are generally tinged with bright red.—Fl. all the summer. Annual.

8. *G. mollé* (Dove's-foot Crane's-bill).—Downy with soft hair. *Leaves* roundish, lobed and cut; *petals* notched; *capsules* wrinkled, not hairy; *seeds* smooth.—Fields and waste places; common. Easily distinguished from any of the preceding by its prostrate habit, downy herbage, and small light purple flowers.—Fl. all the summer. Annual.

9. *G. rotundifolium* (Round-leaved Crane's-bill).—Downy with soft hair. *Leaves* roundish, lobed, and cut; *petals* entire; *capsules* hairy, not wrinkled; *seeds* dotted. —Fields and waste places; not common, but perhaps often confounded with the last, which it much resembles in size and habit.—Fl. June—August. Annual.

10. *G. pusillum* (Small-flowered Crane's-bill).—Downy with soft hair. *Leaves* roundish, lobed, and cut; *petals* notched; *stamens* 5; *capsules* keeled, downy, not wrinkled; *seeds* smooth.—Waste ground; common. Resembling *G. mollé* in habit, but smaller.—Fl. all the summer. Annual.

11. *G. dissectum* (Jagged-leaved Crane's-bill).—*Stems* spreading, hairy; *leaves* roundish, more or less hairy, variously divided into numerous jagged, narrow segments; *sepals* with long points; *petals* notched; *capsules* scarcely wrinkled, hairy; *seeds* dotted.—Fields and waste ground. Distinguished by its deeply cut, hairy, not downy leaves, and the exceedingly short pedicels. Flowers rose-coloured.—Fl. all the summer. Annual.

12. *G. columbínum* (Long-stalked Crane's-bill).—*Stems* spreading, roughish with short hairs; *leaves* deeply 5-lobed, the lobes cut into many long, narrow, acute segments; *flower-stalks* very long; *sepals* with long points; *capsules* smooth.—Waste ground; not very common. Distinguished from the last by its larger blueish rose-coloured flowers, which grow on very long and slender stalks, and by its smooth capsules.—Fl. June—August. Annual.

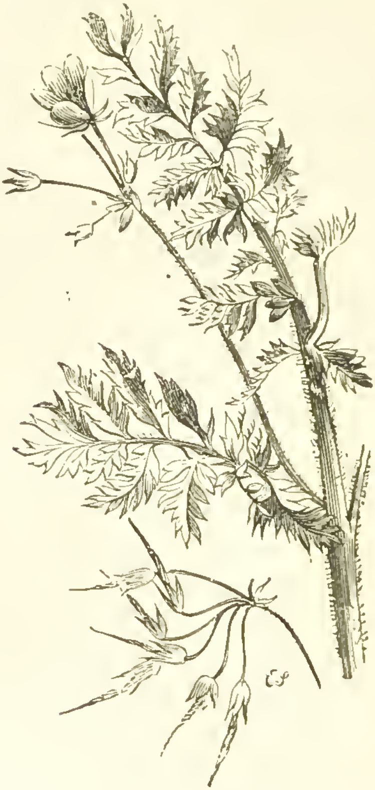
* Particular care should be taken when comparing specimens with the above descriptions, to examine the *root*-leaves; for the *stem*-leaves vary even on the same plant to such a degree as to defy description.

2. ERÓDIUM (*Stork's-bill*).

1. *E. cicutárium* (Hemlock Stork's-bill).—*Stems* prostrate, hairy; *stalks* many-flowered; *leaves* pinnate; *leaflets* sessile, pinnatifid, cut.—Waste places, especially near the sea; common. A straggling plant, with much of the habit of the preceding genus, but distinguished at first sight by its *pinnate* leaves, and *umbels* of lilac (sometimes white) flowers, the petals of which soon fall off.—Fl. all the summer. Annual.

2. *E. moschátum* (Musk Stork's-bill).—*Stems* pro-

strate hairy; *stalks* many-flowered; *leaves* pinnate; *leaflets* nearly sessile, unequally cut; perfect *stamens* toothed at the base.—Waste places, especially near the sea. Whole plant much stouter than the last, of a deeper green, somewhat clammy to the touch, and emitting when handled a strong scent of musk. Flowers bright purple.—Fl. all the summer. Annual.



ERÓDIUM CICUTÁRIUM (*Hemlock Stork's-bill*).

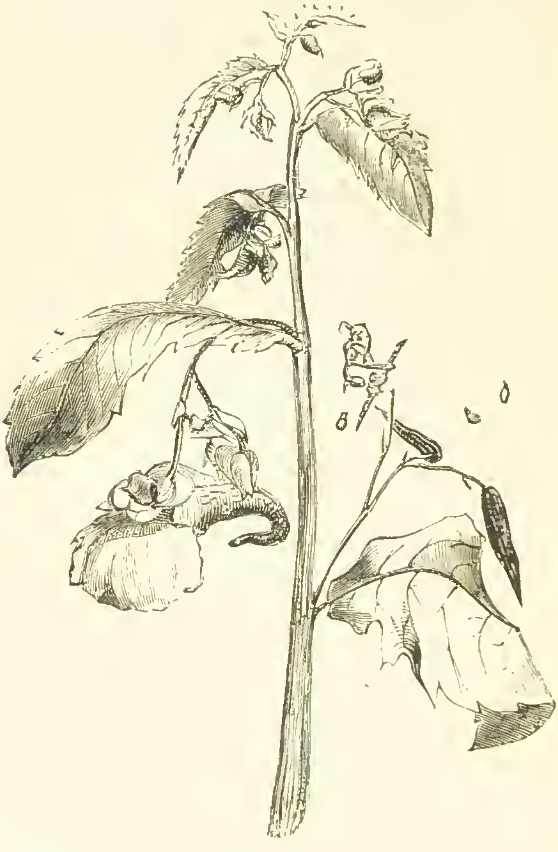
3. *E. marítimum* (Sea Stork's-bill).—*Stems* prostrate,

hairy; *stalks* 1—3 flowered; *leaves* oblong, heart-shaped, variously lobed and notched; *petals* minute or wanting. —Warm places near the sea; not uncommon in the West of England. Whole plant roughish with minute hairs, and sending out several leafy stems, which lie remarkably close to the ground; the leaves are not pinnate, as in the other British species, and the flowers are rarely found with petals. Like many other sea-side plants, it is not unfrequently met with in inland mountainous districts, occurring plentifully on Dartmoor, in Devonshire, many miles from the sea.—Fl. all the summer. Perennial.

* The beaks attached to the capsules of the Stork's-bills become spirally twisted when ripe, often springing to a considerable distance from the parent plant. They are furnished on the inner side with long elastic bristles; and being hygrometric, uncurl when moistened. The combined action of the beak and bristles thus gives to the seed the power of locomotion at every change in the moisture of the atmosphere. A twisted capsule, if moistened and laid on a sheet of paper, will, in its effort to straighten itself, soon crawl an inch or more away from the spot on which it was laid.

ORD. XXI.—BALSAMINACEÆ—BALSAM TRIBE.

The flowers of this order are so exceedingly irregular, that it is almost impossible to define the characters without employing terms which would be out of place in a work which professes to give merely a popular description of British wild flowers. The following description, however, of the only British species belonging to the Balsam Tribe, will serve to identify any others which are likely to fall in the reader's way.—An annual succulent plant, much swollen at the joints, with a solitary branched stem, and egg-shaped, deeply serrated leaves. From the axil of each of the upper leaves proceeds a flower-stalk, taking a horizontal direction, and hiding itself beneath the leaf. Each flower-stalk bears about four drooping flowers, which expand one at a time, and last a very little while. The calyx consists



IMPATIENS (*Balsam*)

of two coloured, nearly round, concave sepals, with an oblique point; within these, on the side of the flower nearest to the stem, is inserted a horn-like petal or sepal, for botanists are undecided which to call it, wide at the mouth and curved downwards at the extremity; on each side of this is a large wavy petal unequally lobed, the largest lobe next the spur, the smaller being easily separable, and having the appearance of a distinct petal. Opposite the stem is a very broad, wavy petal; and at its base are 5 stamens with short filaments, united just beneath the anthers into a ring, and enclosing a 5-celled ovary. The sepals and petals soon fall off, when the ovary enlarges to a 5-celled, 5-valved capsule, externally resembling a cylindrical, strongly ribbed pod. As the seeds approach towards maturity, the valves of the capsule acquire an extraordinary elastic power, and, if touched, instantaneously curl into a spiral form, and spring with considerable force many feet from the plant, dropping the seeds in the way.

Only one of the Balsam tribe is a native of Europe, but in India they are very numerous, and several are cultivated in British gardens.

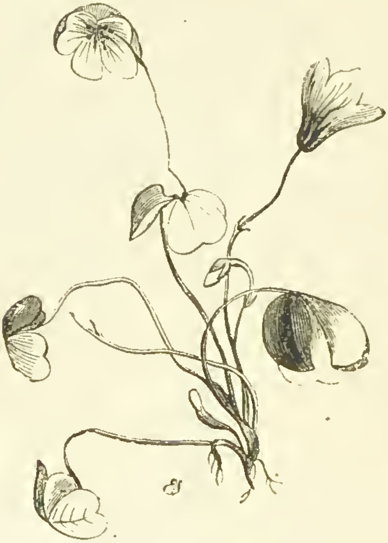
1. IMPATIENS (Balsam).—Characters described above. The name signifying *impatient*, was given from the sudden curling of the valves of the capsule when touched. The only English species, *I. Noli-me-tangere* (*Do-not-touch-me*), is an elegant plant, 1—2 feet high, with large flowers of a delicate yellow, beautifully spotted with orange colour.—It grows in moist shady woods and on the stony banks of rivers in Yorkshire and Westmoreland.—Fl. July, August. Annual.

ORDER XXII.—OXALIDACEÆ.—THE WOOD-SORREL TRIBE.

Sepals 5, persistent; *petals* 5, equal, often united at the base, twisted when in bud; *stamens* 10, with the *filaments* generally combined at the base, the 5 outer shortest; *ovary* 3—5 celled; *styles* 3—5; *capsule* 3—5 celled, with as many, or twice as many, valves; *seeds* enclosed each in an elastic case, which curls back when the fruit is ripe, and throws the seeds to a distance.—

Herbaceous plants, shrubs, or trees, remarkable for the quantity of oxalic acid contained in their foliage, on which account some species are used as sauces, salads, or even pickles. *Oxalis crenúta* was a few years back recommended to be extensively cultivated for the sake of its tuberous roots, which, it was said, would form an excellent substitute for the potato. It has, however, proved to be of little value. Some species have sensitive leaves, and a few are used in medicine.

1. Óxalis (Wood-Sorrel).—*Sepals* 5, united below; *petals* 5, often united below; *stamens* united by the base of their filaments; *styles* 5; *capsules* 5-celled, angular. (Name from the Greek *oxys*, sharp or acid, from the acidity of the leaves.)



ÓXALIS ACETOSELLA (*Common Wood-Sorrel*).

1. Óxalis (*Wood-Sorrel*).

1. *O. Acetosella* (Common Wood-Sorrel).—*Leaves* all springing directly from the root, ternate, hairy; *scape*

with two bracts about the middle, single flowered; *root* toothed.—An elegant little plant, with delicate drooping clover-like leaves, and white or lilac veined *flowers*, growing abundantly in woods and shady places. The leaves, though not so sensitive as some foreign species, fold together at night. This plant is supposed by many to be the true shamrock which was used by St. Patrick to illustrate familiarly the doctrine of the Trinity.—Fl. May, June. Perennial.

* *O. corniculata* (Yellow Wood-Sorrel) has a prostrate stem and small yellow flowers. It occurs only in the West of England, and is by no means so pretty a plant as the last.

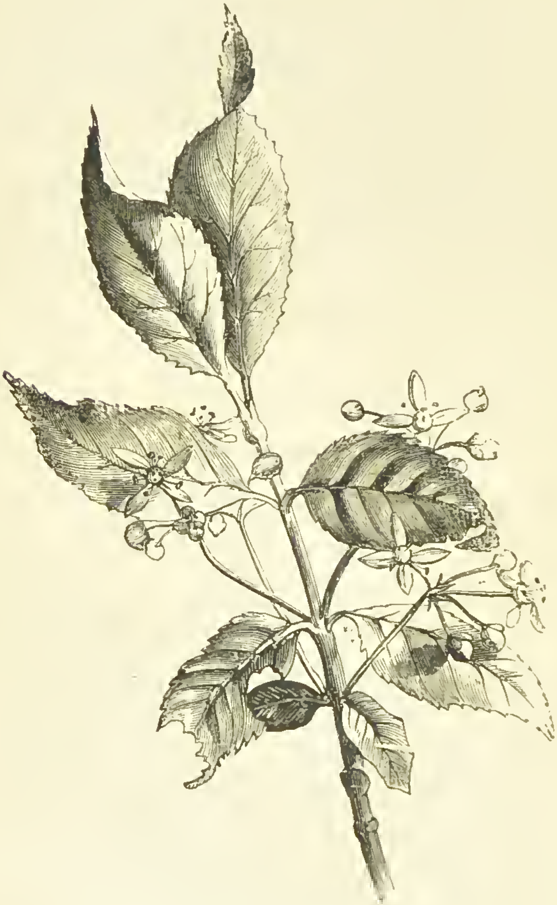
SUB-CLASS II.

CALYCIFLORÆ.

Sepals distinct or united; *petals* distinct; *stamens* inserted on the *calyx*, or close to its base.

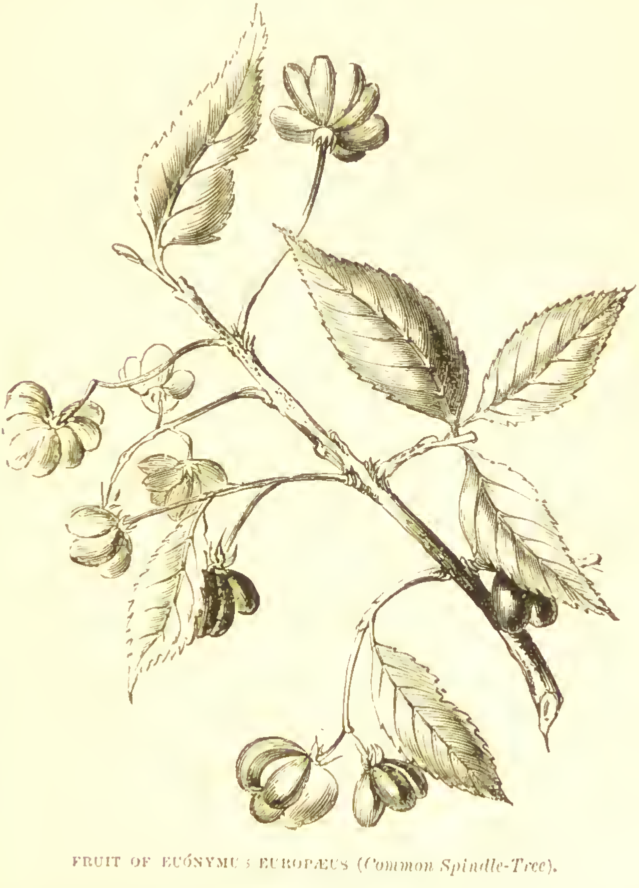
ORDER XXIII.—CELASTRACEÆ.—SPINDLE-TREE TRIBE.

Sepals 4—5, imbricated when in bud, inserted on a fleshy disk; *petals* equal in number to the sepals; *stamens* equal in number to the petals, and alternate with them; *ovary* sunk in the disk, 2—5 celled; *fruit* either a capsule of 2—5 cells, opening with valves, or berry-like; *seeds* often wrapped in a covering distinct from the capsule (called an *arillus*).—A rather large number of plants are included in this order, but not many of great interest. They are natives of the warmer parts of Europe, North America, and Asia, and a great number inhabit the Cape of Good Hope. A few also occur in Chili, Peru, and New Holland. Many of them possess an acrid, stimulant principle. The green leaves of one species are said to be eaten by the Arabs to produce watchfulness, and a sprig of it is believed to be,



FLOWER OF EUÓNYMUS EUROPÆUS (*Common Spindle-Tree*).

to the person who carries it, a protection from the plague. The only British species, the spindle-tree, is most remarkable for its pink lobed seed-vessels, which, in autumn, render the tree a conspicuous object. One species of *Celastrus* (the genus from which the order takes its name) is said to inflict very painful wounds.



FRUIT OF EUÓNYMUS EUROPÆUS (*Common Spindle-Tree*).

The English name, *Spindle-tree*, is derived from the use made of its very compact wood.

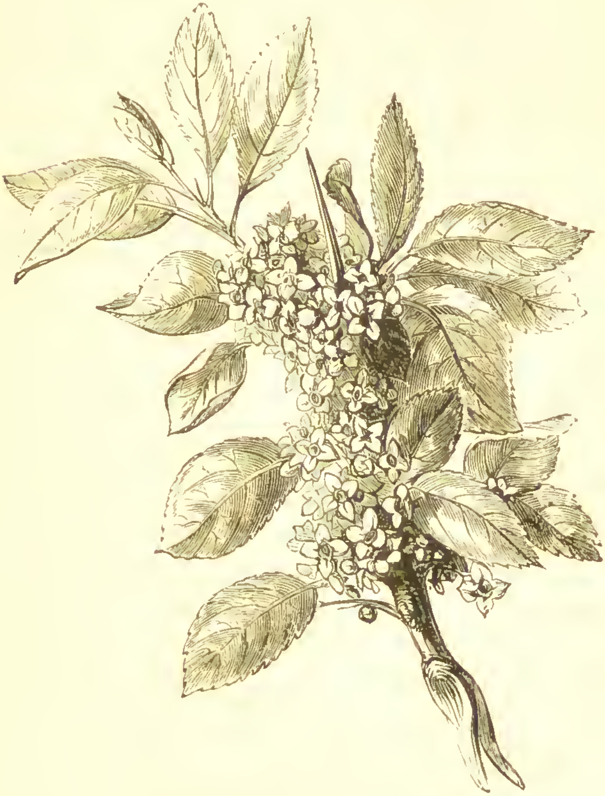
1. Euónymus (Spindle-tree).—*Capsule* 3—5 angled, with 3—5 *cells* and *valves; seeds* solitary in each cell, coated with a fleshy *arillus.* (Name from *Euónymé*, the mother of the Furies, in allusion to the injurious properties of the fruit.)

1. Euónymus (*Spindle-tree*).

1. *E. Europæus* (Common Spindle-Tree).—*Petals* usually 4, oblong, acute; *stamens* usually 4; *branches* angular, smooth; *leaves* broadly lanceolate, minutely serrated.—A hedge and wood shrub, well marked by its clusters of small greenish *flowers*, glossy *leaves*, green *bark*, and, above all, by its deeply lobed *seed vessels*, which, when ripe, are rose-coloured, and on opening disclose the *seeds* curiously wrapped in a scarlet *arillus.* The wood, like that of the wild Cornel and Guelder-rose, is much used for making skewers. (*See* "Forest Trees of Britain," vol. ii.)—Fl. May. Shrub.

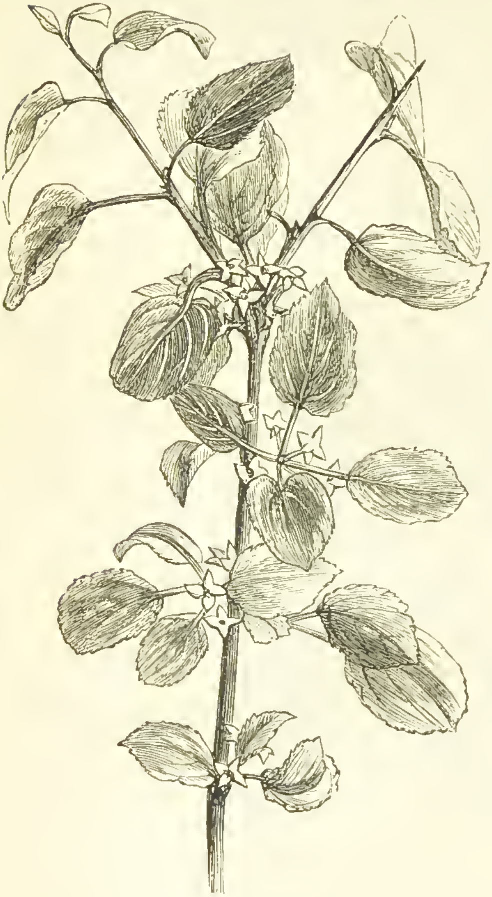
Order XXIV.—RHAMNACEÆ.—Buckthorn Tribe.

Calyx 4—5 cleft, valvate when in bud; *petals* 4—5, inserted into the throat of the calyx; *stamens* 4—5, opposite the petals; *ovary* superior, or half superior, 2—4 celled, surrounded by a fleshy *disk; fruit* either fleshy and not bursting, or dry, and separating in three divisions; *seeds* several.—Trees or shrubs, with simple *leaves*, minute *stipules*, and small greenish *flowers.* Some species of *Zízyphus* produce the jujube, well known in this country as a sweetmeat. *Z. Lotus* is famous for being the plant which afforded food to the ancient Lotóphagi, or Lotus-eaters. Homer states that it was so delicious, that whatever stranger once tasted it, immediately forgot his friends and native country, and desired only to dwell within reach of it. It is a prickly shrub, and bears an abundance of purplish berries, of the size of sloes, and containing large stones. The pulp is mealy, and of a delicious flavour. Under the name of *seedra*, or *sadr*, it still affords food to the Arabs, who separate the pulp from the stone by gently pounding the fruit in a mortar, and either convert it into a kind of bread at once, or lay it by for winter use. A kind of wine is also made from the fruit, but this will not keep



RHAMNUS CATHÁRTICUS (*Common Buckthorn*).

for more than a few days. Mungo Park, Dr. Shaw, and other travellers, found the tree in abundance in many of the sandy parts of Arabia; and the latter states that the fruit, called *nabk*, is regularly exposed for sale in the markets of Barbary. *Z. spina-Christi*, and *Paliúrus aculeátus*, prickly shrubs, common in the East, are severally believed by many persons to have furnished our Blessed Saviour's crown of thorns. Only two plants of this tribe are indigenous to Britain, and belong to the genus *Rhamnus*; their berries are medicinal, but too violent in their effects to be used with safety.



RHAMNUS CATHARTICUS (*Common Buckthorn*).

1. RHAMNUS (Buckthorn).—*Calyx* vase-like, 4—5 cleft; *petals* 4—5 (sometimes wanting); *stamens* 4—5, inserted with the petals into the throat of the calyx; *berry* 2—4-celled. (Name from the Greek *rhamnos*, a branch.)

1. RHAMNUS (*Buckthorn*).

R. cathárticus (Common Buckthorn).—*Branches* terminating in thorns; *flowers* 4-cleft, diœcious (stamens and pistils on separate plants); *leaves* egg-shaped, sharply serrated: *berry* 4-seeded.—A spreading shrub with dense branches of small green *flowers*, which are succeeded by black, powerfully cathartic *berries*. These, if gathered before they are ripe, yield a yellow dye; when ripe, they form, if mixed with gum-arabic and lime-water, the green colour known under the name of Bladder-green.—Woods and thickets.—Fl. May. Shrub.

R. Frángula (Alder Buckthorn).—*Branches* without thorns; *flowers* 5-cleft, all perfect; *leaves* entire, smooth; *berry* 2-seeded.—A rather slender shrub, 6—10 feet high, with smooth blackish *branches*, deep green *leaves*, and small greenish *flowers*, which are not so densely tufted as in the last.—Woods and thickets.—Fl. May. Shrub.

ORDER XXV.—LEGUMINOSÆ.—PEA AND BEAN TRIBE.

Calyx 5-cleft, with the odd lobe in front; *petals* 5, papilionaceous; *stamens* 10, their filaments either united into a tube, or forming 2 sets of 9 and 1; *ovary*, *style*, and *stigma*, single; *seed-vessel* a 2-valved, sometimes imperfectly jointed *pod*, or *legume*; *seeds* on the upper seam of the pod-valves.—A highly interesting order of plants, containing as many as 6,500 species, which vary in size from minute herbs to vast trees with trunks upwards of 80 feet in circumference. In structure, properties, colour of flowers, and range of growth, they vary scarcely less than in dimensions; they are found in all parts of the known world, except St. Helena and another remote island; many species, under the general name of pulse, afford most nutritious food—for example, Peas, Beans, and Lentils; others supply valuable fodder for cattle, as Clover, Vetches, and Lucerne; Rosewood, Logwood, and Acacia offer examples of timber; Gum Arabic, Catechu, Senna, Kino, Liquorice, Balsam of Tolu, and Tamarinds, are the products of other species; Tonka Bean and Balsam of Peru are well-known perfumes; several species of *Indigófera* afford the valuable article of commerce, Indigo; and in Persia and Bokhara, a tree called Camel's Thorn produces abundance of *Manna*, which in those countries is an important article of food. Other species possess medicinal properties of various kinds; not a few are poisonous; and it is worthy of remark that some, the seeds of which are eminently nutritious, have properties of an opposite nature residing in other parts of the plant. The roots of the Kidney Bean, for instance, are dangerously narcotic. The dry pulp which encloses the seeds of the Carob-tree is by some supposed to have been the food of John the Baptist in the wilderness, on which account it is called Locust-tree, and St. John's Bread. The Locust-trees of America (different from the eastern tree) attain an immense size. Martius represents a scene in Brazil, where some trees of this kind occurred of such enormous dimensions, that 15 Indians with outstretched arms could only just embrace one of them. At the bottom they were 84 feet in circumference, and 60 feet where the boles became cylindrical. According to one estimate, they were 2,052 years old, while another carried it up to 4,104. Many plants belonging to the *Mimosa* group display peculiar irritability in their pinnate leaves. This is particularly the case with *M. sensitiva* and *M. pudíca*, which are commonly called Sensitive plants. Almost all the plants of the order which have compound leaves fold them together during the nights. In some foreign species of Leguminosæ the legume loses its characteristic form, and assumes the appearance of a drupe, the papilionaceous form of the flower remaining; in others the petals lose the papilionaceous arrangement; but the seed-vessel retains the form of a legume. All the British species, however, are decidedly papilionaceous, and the principal varieties of form in the pod are those of the Bird's-foot and others, where it is imperfectly jointed, and in Medick, where it is often spirally twisted, so as to resemble a snail-shell. The number of British species amounts to nearly seventy, of which two species of Furze, three of *Genista*, and one of Broom, are shrubs; the rest are herbaceous. For convenience of reference, these are divided into groups.

Group I.—Loteæ.—*The Lotus group.*

Legume not jointed; leaves simple, of 3 leaflets, or pinnate with an odd one.

* *Leaves simple, or of 3 leaflets; stamens all united by their filaments.*

1. Ulex (Furze).—*Calyx* of 2 sepals, with 2 minute *bracts* at the base; *legume* swollen, few-seeded, scarcely longer than the calyx. (Name from the Celtic *ec* or *ac*, a prickle.)

2. Genista (Green-weed).—*Calyx* 2-lipped, the upper lip 2-cleft, the lower with 3 teeth; *standard* oblong; *style* awl-shaped; *legume* swollen, or flat. (Name from the Celtic *gen*, a shrub; *Planta Genista* originated the distinctive name of the Plantagenet family.)

3. Sarothámnus (Broom).—*Calyx* 2-lipped, the upper lip with 2, the lower with 3 teeth; *standard* broadly ovate; *style* thickened upwards; *legume* flat, many-seeded. (Name, the Greek name of the plant.)

4. Onónis (Rest-harrow).—*Calyx* 5-cleft, its segments very narrow; *keel* beaked; *style* thread-like; *legume* swollen, few-seeded. (Name from the Greek *onos*, an ass, by which animal the plant is eaten.)

** *Leaves of 3 leaflets; stamens in 2 sets of 9 and 1.*

5. Medicágo (Medick).—*Legume* sickle-shaped, or

spirally twisted. (Name of Greek origin, and denoting that some plant of the family was introduced from Media.)

6. MELILÓTUS (Melilot).—*Calyx* with 5 nearly equal teeth; *petals* distinct, soon falling off; *legume* of few seeds, longer than the calyx. (Name from *mel*, honey, and *lotus*, the plant so called.)

7. TRIGONÉLLA (Fenugreek).—*Calyx* with 5 nearly equal teeth; *petals* distinct; *keel* obtuse; *legume* straight or nearly so, many-seeded. (Name in Greek denoting *three-angled*, from the form of the corolla).

8. TRIFÓLIUM (Trefoil).—*Calyx* with 5 unequal teeth; *petals* combined by their claws, and persistent; *legume* of few seeds, concealed in the calyx. (Name from *tria*, three, and *folium*, a leaf, each leaf being composed of 3 leaflets.)

9. LOTUS (Bird's-foot Trefoil).—*Calyx* with 5 nearly equal teeth; *keel* beaked; *legume* cylindrical, many-seeded, and imperfectly many-celled. (Name from the Greek *lotos*.)

*** *Leaves pinnate, with a terminal leaflet.*

10. ANTHYLLIS (Lady's Fingers).—*Stamens* all united by their filaments; *calyx* inflated, 5-toothed; *legume* enclosed in the calyx. (Name from the Greek *anthos*, a flower, and *ioulos*, down, from the downy calyx.)

11. OXÝTROPIS.—*Stamens* in 2 sets, 9 and 1: *keel* of the *corolla* pointed: *legume* more or less perfectly 2-celled. (Name from the Greek *oxys*, sharp, and *tropis*, a keel.)

12. ASTRÁGALUS (Milk Vetch).—*Stamens* in 2 sets, 9 and 1; *keel* of the *corolla* blunt; *legume* more or less perfectly 2-celled. (Name from the Greek *astrágalos*, a pastern bone, from the knotted form of the root of the plant to which the name was originally given.)

Group II.—VICIEÆ.—*The Vetch Group.*

Legume not jointed; stamens in 2 sets, 9 and 1; leaves pinnate, terminating in a tendril or short point.

13. VÍCIA (Vetch).—*Calyx* 5-cleft; *style* thread-like, or angular, with a small ring of down near the extremity, or a tuft on the under side; *leaves* with tendrils. (Name originally derived, according to Théis, from *gwig*, Celtic; *wicken*, in German; *bikion*, in Greek; *vesce*, in French.—*Hooker*.)

14. LÁTHYRUS (Vetchling).—*Calyx* 5-cleft; *style* flattened on the upper side, downy beneath the stigma; *leaves* with tendrils, except in *L. Nissolia*. (Name from the Greek *lathyros*, a plant so called.)

15. ÓROBUS (Bitter Vetch).—*Calyx* 5-cleft, swollen at the base, oblique at the mouth, its upper *segments* deeper and shorter; *style* flattened on the upper side, downy on the upper side; *leaves* ending in a short point. (Name from the Greek *oro*, to stimulate, and *bous*, an ox, from its nutritive properties.)

Group III.—HEDYSÁREÆ.—*The Joint-Vetch Group.*

Legume divided into 1-seeded joints or cells; leaves pinnate, with an odd leaflet.

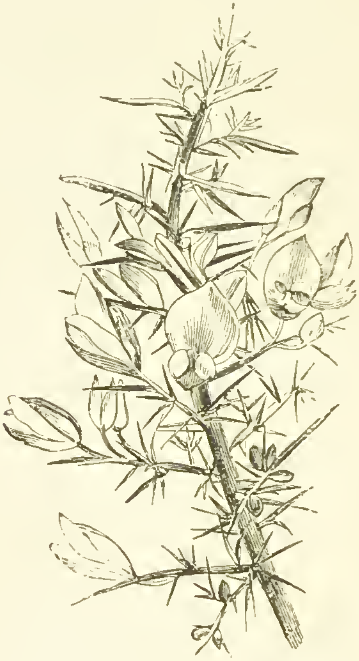
* *Flowers simple, in umbels.*

16. ORNÍTHOPUS (Bird's-foot). — *Legume* curved, divided into many equal-sided joints, each of which contains a seed; *keel* small, obtuse. (Name from the Greek *ornis*, a bird, and *pous*, a foot, to which the tufts of seed-vessels bear a singular resemblance.)

17. HIPPOCRÉPIS (Horse-shoe Vetch).—*Legume* composed of numerous crescent-shaped joints, so that each legume has many deep notches on one side; *keel* narrowed into a beak. (Name from the Greek *hippos*, a horse, and *crepis*, a shoe, from the form of the joints of the seed-vessels.)

** *Flowers in racemes.*

18. Onóbrychis (Saint-foin).—*Legume* straight, 1-celled, 1-seeded, not opening, the lower edge fringed or winged. (Name from the Greek, *onos*, an ass, and *brycho*, to bray, it being supposed that the smell excites braying.)



ULEX EUROPÆUS (*Common Furze.*)

1. Ulex (*Furze*).

1. *U. Europœus* (Common Furze, Gorse, or Whin).—*Bracts* ovate, not adhering closely to the calyx: *branches* copiously beset with branched thorns.—A much branched, spreading shrub, almost leafless, except in its seedling state, when the leaves are composed of 3 narrow, soft leaflets. It attains maturity in about four

years, but in sheltered places continues to grow until it reaches a height of from 12 to 18 feet. Its natural habit is, however, to grow on dry, exposed commons, which, in its flowering season, it covers with a gorgeous sheet of golden blossoms, entirely concealing its somewhat unsightly branches. Perhaps no plant is so broadly characteristic of English scenery, and the English climate, as "Yellow Whin." It does not thrive in hot countries; and if removed to a much colder climate, pines and dies; it is rare even in the Highlands of Scotland. The seed-vessels burst elastically in hot weather with a crackling noise, scattering the seeds on all sides. The calyx-teeth of this species are so closely united as to be scarcely visible.—Fl. February—June. Shrub.

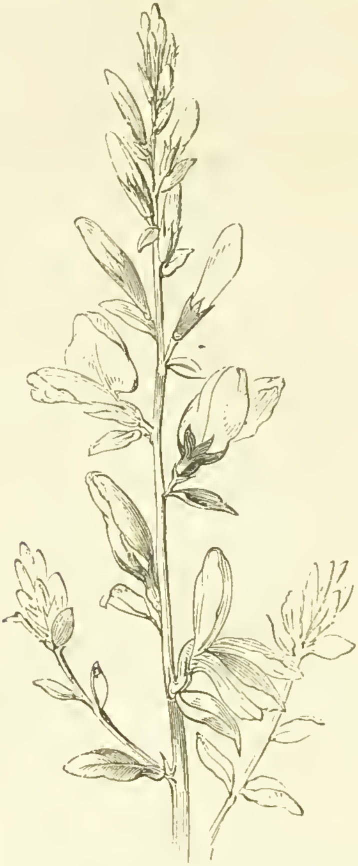
* A variety has been found in Ireland, which does not flower freely, and also differs from the common form of the plant in having a soft and succulent, instead of a rigid, habit. This variety has been cultivated with success as fodder for sheep and oxen.

2. *U. nanus* (Dwarf Furze).—*Calyx-teeth* spreading; *bracts* minute, closely pressed to the calyx.—A very distinct species from the last, with which, however, it is sometimes confounded. It may readily be distinguished by the above characters, by being smaller in all its parts, and by the spreading wings of its flowers, which, moreover, usually appear at the same season with the Heath, a plant with which it loves to intertwine its rigid branches.—Fl. August—November. Shrub.

2. GENISTA (*Green-weed*).

1. *G. Ánglica* (Needle Green-weed, or Petty Whin).—*Stems* thorny and leafless below; *leaves* narrow, smooth; *legumes* smooth, inflated.—Not uncommon on heaths and moors. A low shrub, about a foot high, with reclining tough stems, which are armed at intervals with groups of slender, very sharp thorns. The

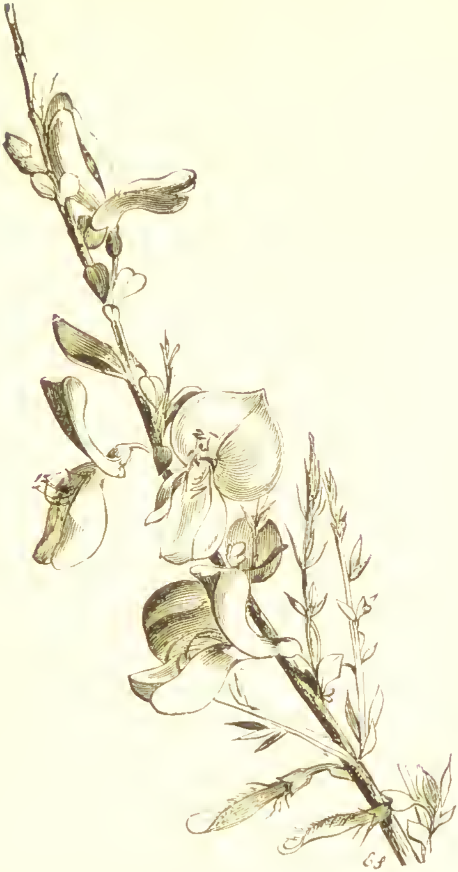
upper branches are destitute of thorns, and produce leafy clusters of yellow flowers, which (like some other yellow



GENISTA TINCTORIA (*Dyer's Green-weed, Woad-waxen*).

flowers belonging to this Natural Order) are remarkable for turning green in drying.— Fl. May, June. Shrub.

2. *G. tinctória* (Dyer's Green-weed, Woad-waxen).



SAROTHÁMNUS SCOPARIUS *(Common Broom).*

—Thornless: *leaves* narrow, acute, nearly smooth; *flowers* in clusters; *legumes* flattened, smooth.—A low shrub, about a foot high, with tough stems, bright-green foliage, and yellow flowers on short stalks. It grows in heathy places and fields, and is used to dye yarn of a yellow colour.—Fl. July, August. Shrub.

3. *G. pilósa* (Hairy Green-weed).—Thornless; *leaves* narrow, obtuse, the lower ones often inversely heart-shaped, silky beneath; *flowers* axillary, on short stalks; *legumes* downy.—Heathy places, rare. A low shrub, with prostrate stems, which are gnarled and much branched, and small yellow flowers.—Fl. May, and again in autumn. Shrub.

3. SAROTHÁMNUS (*Broom*).

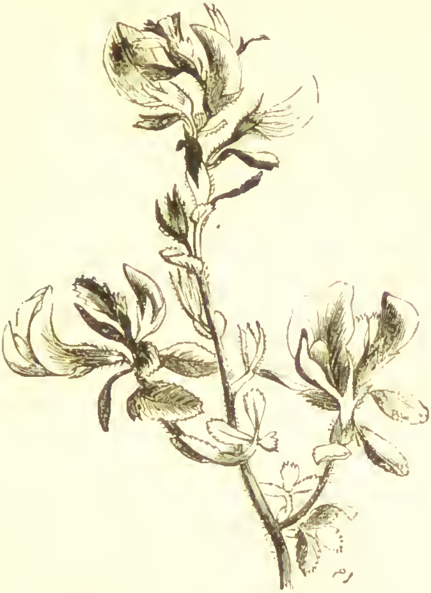
1. *S. scopárius* (Common Broom).—The only British species, well distinguished by its numerous, slender, erect branches, with small seattered leaves of 3 leaflets, and large yellow flowers. The legumes when ripe are nearly black, and hairy at the margin.—Fl. June. Shrub.

* Described by some botanists under the name of *Cýtisus scopárius*, and by others under that of *Spartium scoparium.*

4. ONÓNIS (*Rest-harrow*).

1. *O. arvensis* (Common Rest-harrow).—*Stem* shrubby, hairy; *leaflets* oblong; *flowers* axillary; *calyx* much shorter than the corolla.—Barren, sandy places, common, especially near the sea. A very variable plant, sometimes spreading on the ground, and rooting at the joints; at other times forming a small leafy bush. The roots are tough and very long, hence the English name. The branches often terminate in thorns; the leaves are viscid; the flowers of a bright rose-colour, and handsome. According to some botanists, several species are included under one name.—Fl. all the summer. Perennial.

* *O. reclináta* (Small Spreading Rest-harrow) is a herbaceous species which, as a British plant, occurs only near Tarbert, Galloway.



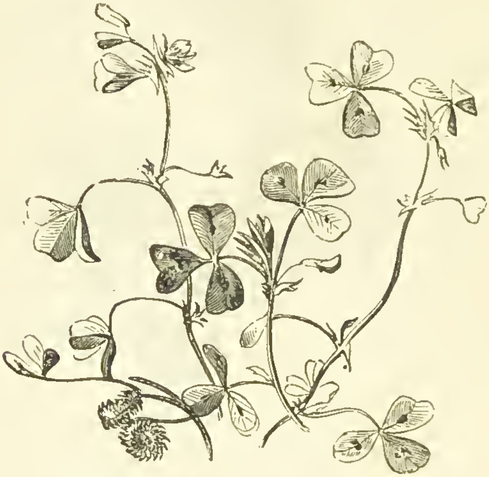
ONÓNIS ARVENSIS (*Common Rest-harrow*).

5. MEDICÁGO (*Medick*).

1. *M. lupulína* (Black Medick, or Nonsuch).—*Leaflets* inversely egg-shaped, finely toothed; *stipules* scarcely notched; *flowers* in dense oblong heads; *legumes* rugged, 1-seeded, kidney-shaped.—In pastures, common. A herbaceous plant, with the habit of some of the smaller Clovers, from which it may be distinguished by its legumes not being enclosed within the calyx. *Flowers* yellow; *legumes* black, not spirally curved.—Fl. June—August. Annual.

2. *M. maculáta* (Spotted Medick).—*Leaflets* inversely heart-shaped; *stipules* toothed; *flowers* 2—4 together; *legumes* spirally twisted into a prickly ball; *prickles* curved.—In the south and west of England, not uncom-

mon. The leaflets are remarkable for having in their centre a purple, heart-shaped spot. In Cornwall this plant, under the name of *Spotted Clover*, is considered very injurious to pasturage.—Fl. yellow, June—September. Annual.



MEDICAGO MACULATA (*Spotted Medick*).

3. *M. mínima* (Little Bur-Medick).—*Leaflets* inversely egg-shaped, downy; *stipules* scarcely toothed: *flowers* 2—4 together; *legumes* spirally twisted into a prickly ball; *prickles* hooked.—Sandy places, rare.—Fl. yellow. June, July. Annual.

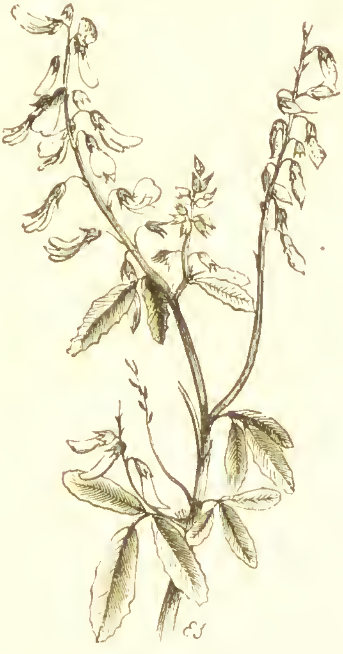
4. *M. denticulata* (Toothed Medick).—*Leaflets* inversely heart-shaped, smooth; *stipules* jagged: *flowers* 2—4 together; *legumes* loosely spiral: *prickles* hooked. —Very rare.—Fl. yellow, April—June. Annual.

* Besides the above, two other species of *Medicágo* are occasionally found, which are supposed to have escaped from cultivation. *M. satíva* (Lucerne), which has purple flowers, and *M. falcáta* (Sickle Medick), an

allied species with yellow flowers. In these two the leaflets are oblong and toothed, and the legumes are slightly twisted.

6. Melilótus (*Melilot*).

1. *M. officinális* (Common Yellow Melilot).—*Stem* erect; *leaflets* narrow, egg-shaped, serrated; *flowers* in 1-sided clusters; *petals* equal in length; *legumes* 2-seeded, wrinkled.—A branched herbaceous plant, 2 to 3 feet high, with light green foliage, and small yellow flowers, not uncommon in waste places. This plant, while drying, smells like Woodruff, or new hay.—Fl. June—August. Annual.



MELILÓTUS OFFICINÁLIS (*Common Yellow Melilot*).

* *M. leucantha* (White Melilot), a much less common plant, differs from the preceding in having white flowers, in which the standard is longer than the wings and keel.

7. TRIGONELLA (*Fenugreek*).

1. *T. ornithopodioïdes* (Bird's-foot Fenugreek).—*Flowers* 2—3 together; *legumes* 8-seeded, twice as long as the calyx.— Dry, sandy places, not common. A small plant, with spreading prostrate branches and small reddish flowers.

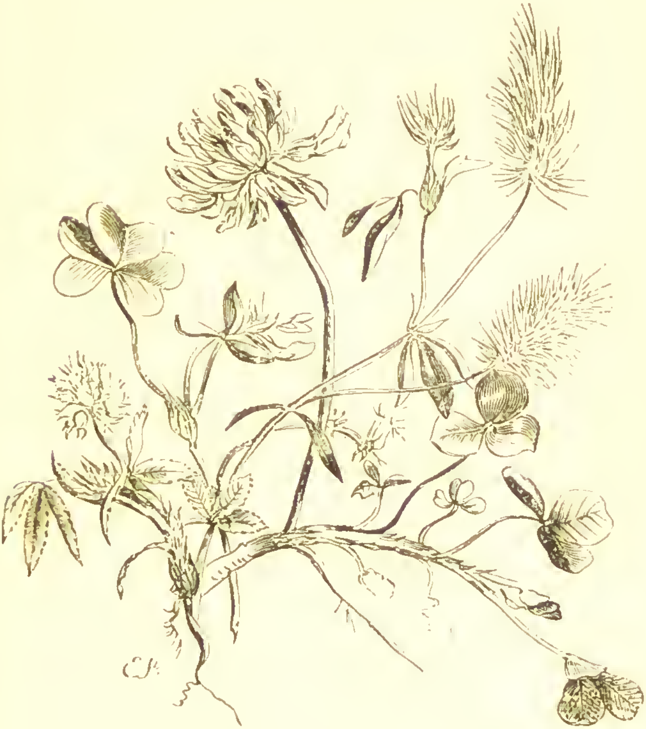
8. TRIFOLIUM (*Trefoil*).

* *Legumes with several seeds.*

1. *T. repens* (White or Dutch Clover).—*Flowers* in roundish heads, stalked, finally bent back; *legumes* 4-seeded; *stems* creeping.— Abundant in meadows, where it forms excellent pasture. The flowers are white, sometimes tinged with pink, and fragrant; on the sandy sea coast they appear early in spring, in which situations the foliage is stunted and scanty. The leaflets often have a white line near the middle, and sometimes a dark spot as well. In a variety commonly cultivated in gardens, under the name of Shamrock, nearly the whole of the centre of each leaflet is tinged with dark purple. The real Shamrock is this species, and, perhaps, any other "3-leaved grass" which grows in similar situations. Much discussion about the identity of Shamrock might have been saved, by recollecting that St. Patrick's day falls at a season when the botanical characters of the trefoils are scarcely developed, and that the devotees of that Saint can scarcely be expected to have possessed much botanical knowledge. Some antiquarians contend that, as Ireland was a well-wooded country in St. Patrick's time, the Saint very probably selected a leaf of Wood-Sorrel (*Óxalis Acetosella*) to illustrate the Doctrine of the Trinity.—Fl. through the summer. Perennial.

** *Legumes 1 or 2 seeded; standard falling off, or remaining unaltered; calyx not inflated.*

2. *T. pratensé* (Purple Clover).—*Flowers* in dense, roundish oblong heads; *calyx* hairy, its bristle-like divisions half as long as the corolla: *stipules* broad, terminating abruptly in a bristle-point; *leaflets* broad, notched, or entire.—The common Clover of meadows, where it forms a valuable part of the hay crop. The long tubes of the corolla abound in honey, on which



TRIFOLIUM STRICTUM, SUBTERRANEUM, REPENS, *and* ARVENSE.

account they are often called by children Honeysuckles. —Fl. all the summer. Perennial.

3. *T. médium* (Zigzag Clover).—*Flowers* in loose, stalked, round heads; *calyx-teeth* bristle-like, the 2 upper shortest; *stipules* narrow, tapering to a point: *leaflets* narrow, elliptical; *stem* zigzag.—Dry pastures and bushy places; common. Not unlike the last, but well distinguished by its slenderer and more erect habit, and especially by its narrow *leaflets*, and tapering, not abrupt, *stipules*. It thrives better than the preceding in dry soils, but is said to contain not more than half as much nutritious matter.—Fl. July, August. Perennial.

4. *T. ochroleucum* (Sulphur-coloured Trefoil.)—*Flowers* in dense, stalked, terminal heads, which are at first hemispherical, afterwards egg-shaped; *calyx-teeth* awl-shaped, the lower one much the longest; *lower leaflets* heart-shaped, upper oblong.—Not unfrequent in the eastern counties, growing a foot or more in height. The whole plant is downy; the flowers are cream-coloured, turning brown as they fade. The lower leaves are on very long stalks.—Fl. July, August. Perennial.

5. *T. arvensé* (Hare's-foot Trefoil).—*Flowers* in terminal oblong heads, which are soft with downy hair; *calyx-teeth* hairy, much longer than the corolla; *stem* branched, erect.—A very distinct species, common in sandy places, especially near the sea. The peculiarly soft heads, which are nearly cylindrical, and in which the pale-pink flowers are almost concealed, at once distinguish this from any other British species.—Fl. July—September. Annual.

6. *T. marítimum* (Teazel-headed Trefoil).—*Flowers* in terminal roundish heads; *calyx-teeth* broad, pointed, and rigid, shorter than the corolla, finally becoming enlarged and spreading; *stipules* awl-shaped, very long. —Salt-marshes; not common. Stem spreading; flowers pink, small.—Fl. June—July. Annual.

7. *T. scabrum* (Rigid Trefoil).—*Flowers* in dense

prickly heads, which are both terminal and axillary; *calyx-teeth* unequal, very rigid, finally spreading; *stems* prostrate.—Barren places, especially near the sea. A small plant, with inconspicuous whitish flowers, and remarkable only for its prickly calyces, especially when in fruit.—Fl. June, July. Annual.

8. *T. striátum* (Soft Knotted Trefoil).—*Flowers* in downy heads, which are both terminal and axillary; *calyx* rigid, furrowed, with straight, unequal, awl-shaped teeth, swollen when in fruit; *stems* ascending.—Barren places, especially near the sea; common. Larger than the last, with which it is often found growing. The whole plant is covered with more or less silky hairs; the flowers are light purple, and the calyx is striated with prominent nerves.—Fl. June, July. Annual.

9. *T. glomeratum* (Smooth Round-headed Trefoil).—*Flowers* in round prickly heads, which are both terminal and axillary; *calyx-teeth* broad, very acute, reflexed; *stems* prostrate.—Gravelly places near the sea; not common. Very similar to *T. scabrum*, but the heads are rounder, and the calyx-teeth more leafy and spreading.—Fl. June. Annual.

10. *T. subterraneum* (Subterraneous Trefoil).—*Flowers* 3—5 together, in axillary heads, at first erect, in fruit abruptly bent down, and sending out branched fibres, which penetrate into the ground.—Dry banks; not uncommon. A curious little plant, a few inches long, with prostrate branched stems and white flowers, which are remarkable for the above-named character of bending down and, by the help of the altered calyx, burying the seed in the ground while yet attached to the plant.—Fl. May, June. Annual.

* To this group belong several other species of Trefoil, which are of local occurrence, and therefore not likely to be met with by the beginner in botany. *T. stellátum* (Starry-headed Trefoil) occurs only near Shoreham, on the coast of Sussex. It is distinguished by the remarkably large calyx of the fruit, which spreads

in a star-like manner. *T. Molinerii* (a variety of the commonly cultivated *T. incarnatum*), *T. Boccóni*, and *T. strictum*, were, until recently, considered to be confined to the southern shores of continental Europe, but are now known to be undoubtedly wild on the cliffs of the extreme south coast of Cornwall. The first is a short downy plant, with large soft heads of white flowers; *T. Boccóni* is a small plant, 2—4 inches high, with roundish heads of white or pink flowers, the heads always growing in pairs; and *T. strictum*, which is of about the same size, has globular heads of whitish flowers, and is well distinguished by its 2-seeded legumes, which are bulged near the summit, and by its narrow-toothed leaflets, resembling in shape those of *Melilótus officinális*. (*See* "A Week at the Lizard," p. 313.)

*** *Calyx inflated after flowering.*

11. *T. fragiferum* (Strawberry-headed Trefoil).—*Heads* globose, on long stalks; *calyx*, after flowering, membranaceous, downy, and remarkably inflated; *stem* creeping.—Meadows and pastures, often near the sea; not very common. This plant has somewhat of the habit of *T. repens;* but the flowers are light purple, and the heads of inflated calyces, which are often tinged with pink, are not unlike the fruit from which the plant receives its name.—Fl. July, August. Perennial.

**** *Standard withering but not falling off, finally bending down and covering the legume; flowers yellow.*

12. *T. procumbens* (Hop Trefoil).—*Flowers* in dense, roundish, oblong heads; *leaves* stalked.—Dry pastures: abundant. Not unlike *Medicágo lupulína* in habit, but at once distinguished when in fruit by the hop-like heads of withered flowers. Specimens occur on the sea coast, 2—3 inches high, with scanty foliage, and comparatively large flowers.—Fl. June, July. Annual.

13. *T. filiformé* (Lesser Yellow Trefoil).—*Flowers* in loose heads, 3—12 together; *leaves* scarcely stalked.—Dry pastures; abundant. Like the last, but smaller.—Fl. June, July. Annual.

9. Lotus (*Bird's-foot Trefoil*).

1. *L. major* (Greater Bird's-foot Trefoil).—*Flowers* in umbels, 8—10 together; *calyx-teeth*, while in bud, spreading like a star; *stems* nearly erect, tubular.—In damp bushy places; common. Whole plant more or less covered with soft hair; 1—3 feet high; stem weak, and usually supported by the bushes and other plants among which it grows.—Fl. deep yellow, July, August. Perennial.

LOTUS CORNICULÁTUS (*Common Bird's-foot Trefoil*).

2. *L. corniculatus* (Common Bird's-foot Trefoil).—*Flowers* in umbels, 8—10 together; *calyx-teeth* straight in the bud; *stems* prostrate, not tubular.—Pastures; abundant. A pretty flower, familiarly known among children by the name of "Shoes-and-stockings." The foliage is usually smooth, with a few scattered hairs, or more rarely covered with long soft hairs. The flowers on the same plant, and even in the same umbel, vary from bright yellow to deep brownish orange.—Fl. July, August. Perennial.

* A third species, *L. angustíssimus*, which grows in the west of England, is distinguished by its bearing heads of 3—4 small flowers; the calyx-leaves are very long, and the whole plant is clothed with soft hairs.

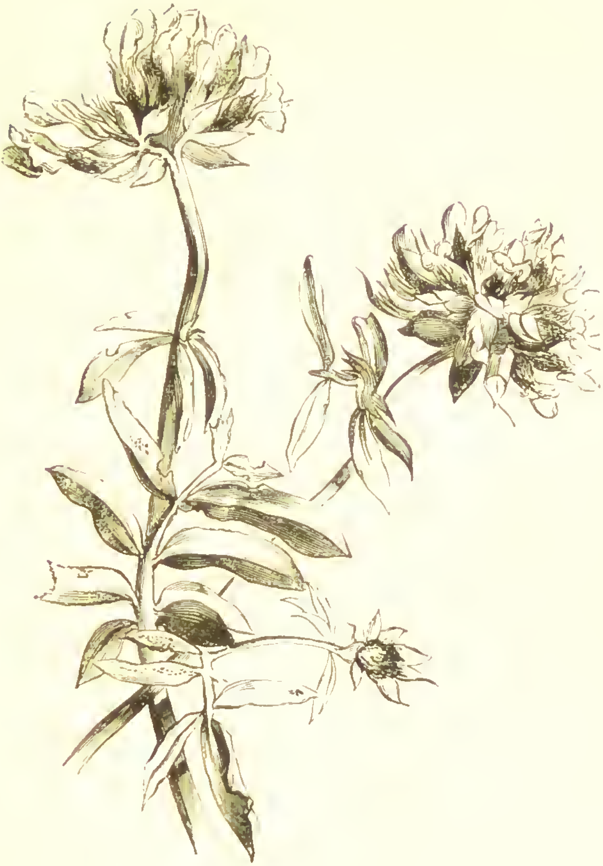
10. ANTHYLLIS (*Lady's Fingers*).

1. *A. Vulñeraria* (Common Lady's Fingers, or Kidney Vetch).—The only British species. A handsome herbaceous plant, with pinnate *leaves* of a glaucous hue (the terminal leaflet largest), and yellow *flowers*, with pale inflated *calyces*. The dense heads of flowers grow two together at the end of each stalk. On some of the sea-cliffs of Cornwall, and a few other places, the plant has a stunted habit of growth, and bears crimson, purple, cream-coloured, or white flowers.—Fl. June, August. Perennial.

11. OXÝTROPIS.

1. *O. Uralensis* (Hairy Mountain Oxytropis).—*Leaves* and *flowers* rising directly from the roots: *flower-stalks* longer than the leaves, silky, like the rest of the plant: *legume* 2-celled.—Dry mountain pastures in Scotland.—Fl. in heads, bright purple, June, July. Perennial.

* Another species, *O. campestris* (Yellowish Mountain Oxytropis), grows on the Clova mountains. In this the *leaves* and *flower-stalks* are about equal in length;



ANTHYLLIS VULNERARIA (*Common Lady's Fingers*).

the *flowers* are yellowish, tinged with purple, and the *legume* is imperfectly 2-celled.

12. Astrágalus (*Milk Vetch*).

1. *A. glycyphyllus* (Sweet Milk Vetch).—*Stem* prostrate; *leaves* longer than the flower-stalks; *legumes*, curved, smooth.—Thickets, on a chalky or gravelly soil. Stem 2—3 feet long; flowers in short dense spikes, dull yellow.—Fl. June, July. Perennial.

VICIA CRACCA (*Tufted Vetch*).

2. *A. hypoglottis* (Purple Milk Vetch).—*Stem* pro-

strate; *flower-stalks* longer than the leaves; *legumes* erect, hairy.—Chalky and gravelly places. Well distinguished from the last by its slender stems a few inches long, and by its purplish, sometimes white, flowers.—Fl. July. Perennial.

* *A. alpínus* grows only in the Glen of the Dole, Clova, and is distinguished by its spreading, branched *stem*, by its spikes of drooping *flowers*, which are white, tipped with purple, and by its pendulous *legumes*, clothed with black hairs.

13. Vícia (*Vetch*).

* *Flower-stalks longer than the leaves; many-flowered.*

1. *V. sylvática* (Wood Vetch).—*Leaflets* in about 8 pairs, elliptical, abrupt, with a short point; *stipules* crescent-shaped, deeply toothed at the base.—Mountainous woods, not common. A large and beautiful species, with a long stem, 3—6 feet high, climbing by means of its branched tendrils. Flowers numerous, cream-coloured, with bluish veins.—Fl. July, August. Perennial.

2. *V. Cracca* (Tufted Vetch).—*Leaflets* in about 10 pairs, narrow, pointed, silky, with tendrils; *stipules* half-arrow-shaped, scarcely toothed; *flowers* crowded in one-sided spikes.—Bushy places, frequent. One of the most ornamental of British plants, climbing along the tops of hedges, and adorning them with its slender spikes of blue and purple flowers.—Fl. July, August. Perennial.

3. *V. Órobus* (Wood-bitter Vetch).—*Leaflets* in 7—10 pairs, oblong, acute, without tendrils; *stipules* half-arrow-shaped, slightly toothed; *flowers* in one sided clusters.—Rocky woods in the north. A branched herbaceous plant with many prostrate stems and purplish white flowers—Fl. May, June. Perennial.

** *Flowers axillary, scarcely stalked.*

4. *V. satíva* (Common Vetch).—*Flowers* in pairs, with very short stalks; *leaflets* oblong, in 5—7 pairs,

the lower ones often inversely heart-shaped; *stipules* half-arrow-shaped, toothed at the base, marked with a sunken dark spot; *seeds* smooth.—Fields; common. This species, being extensively cultivated as fodder for cattle, varies considerably in luxuriance, according to soil. It usually grows about 2 feet high, and bears blue and purple or red flowers. A small variety, *V. angustifolia* (Narrow-leaved Vetch), by some botanists considered a distinct species, has very narrow *leaves*, and crimson *flowers*.—Fl. June, July. Annual.

5. *V. lathyroídes* (Spring Vetch).—*Flowers* solitary, sessile; *legumes* smooth; *leaflets* in 2—3 pairs; *stipules* entire, not marked with a dark spot; *seeds* nearly cubical, roughish.—Dry places, but not very common. Nearly allied to the last, but very much smaller, rarely exceeding 6 inches in length.—Fl. bright purple, April, May. Annual.

6. *V. lútea* (Rough-podded Yellow Vetch).—*Flowers* solitary, sessile; *legumes* hairy; *stipules* marked with a deep red blotch.—Sea-coast; rare. About 2 feet high, with pale yellow, rather large flowers.—Fl. June, July. Perennial.

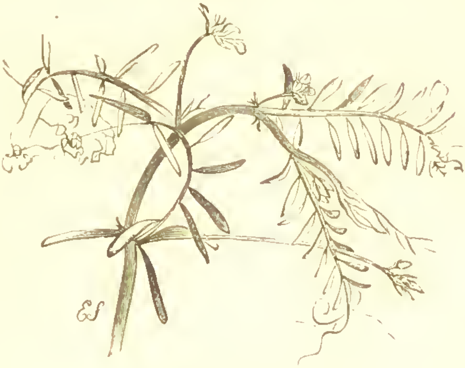
7. *V. sépium* (Bush Vetch).—*Flowers* in axillary clusters of from 4—6; *legumes* smooth; *leaflets* egg-shaped, obtuse, gradually decreasing in size towards the end of the leaf-stalk.—Woods and shady hedges; common. Distinguished by its clusters of bluish purple flowers, which grow on short stalks in the axils of the leaves.—Fl. May, June. Perennial.

*** *Flower-stalks elongated; few flowered; style, downy all round.*

8. *V. hirsúta* (Hairy Vetch, or Tare).—*Flowers* about 6 together; *legumes* hairy, 2-seeded.—Fields and hedges; very common. A slender, much-branched plant, forming tangled masses of stems and leaves, with minute bluish white flowers. This, though a mischievous weed, is not the Tare of the Holy Scriptures

which is supposed to be the *Darnel* (*Lólium temuléntum*).—Fl. June, July. Annual.

This and the following species are by some botanists placed in a distinct genus, *Ervum*.



VÍCIA HIRSÚTA (*Hairy Tare*).

9. *V. tetraspérma* (Smooth Vetch, or Tare).—*Flowers* about 2 together, on a slender stalk; *legumes* smooth, 4-seeded.—In similar situations with the last, but less common. The flowers are light purple, and the whole plant much slenderer and less branched than *V. hirsúta*. —Fl. June, July. Annual.

* *V. grácilis* (Slender Vetch, or Tare) is by some botanists considered a distinct species; others make it a variety of the last. The *flowers* grow 1—4 together, and the *legumes* are 6—8-seeded. It has been found in Kent and the Isle of Wight. Other, but less common, species of Vetch, are *V. hýbrida* (*flowers* yellow), closely allied to *V. lútea*, but distinguished by having the outside of the *standard* clothed with abundance of shining yellowish hair; this is found only on Glastonbury-Tor Hill, and at Swan Pool, near Lincoln: *V. lævigáta* (*flowers* pale blue, or whitish), allied to the last, but having smooth, not hairy, *legumes*; grow-

ing on the pebbly shore of Weymouth, Dorsetshire: *V. Bithýnica* (*flowers* solitary, stalked, purple with whitish wings), which has 4 pairs of *leaflets* on the lower *leaves*, and only 2 on the upper. This last grows in bushy places, on a gravelly soil, near the sea.

14. Láthyrus (*Vetchling*).

** Stalks many-flowered.*

1. *L. pratensis* (Meadow Vetchling).—*Leaf* of two narrow leaflets; *stipules* arrow-shaped, as large as the leaflets.—Grassy places; common. A climbing plant, 2—3 feet long, with showy bright yellow flowers, which all turn one way.—Fl. July, August. Perennial.

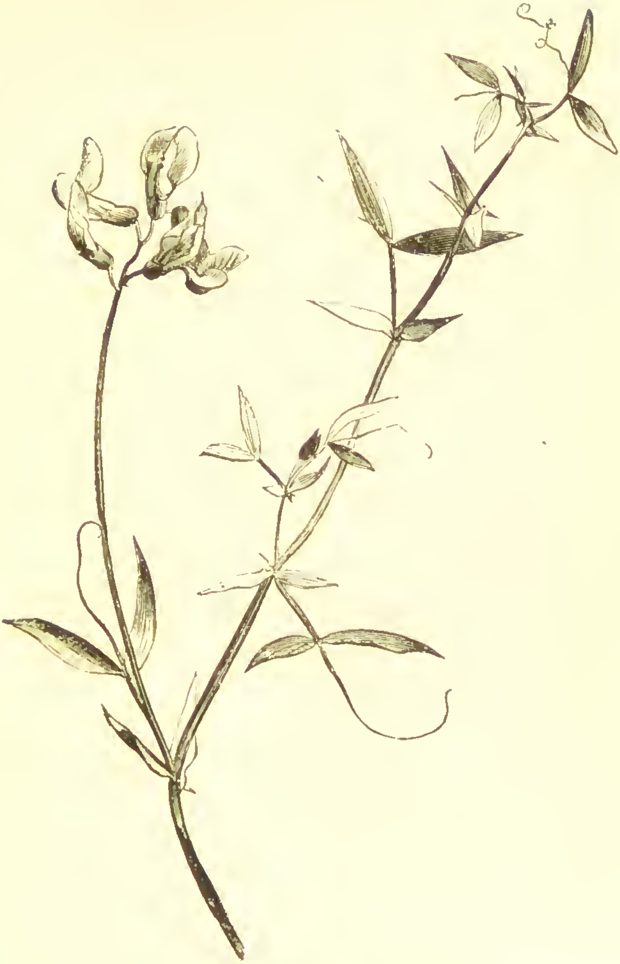
2. *L. sylvestris* (Narrow-leaved Everlasting Pea).—*Leaf* of two sword-shaped leaflets; *stem* winged.—Woods and thickets; not very common. Much resembling the "Everlasting Pea" of gardens (*L. latifolius*). The stems climb to the height of 5—6 feet; the flowers are large, greenish yellow tinged with purple, but not so handsome as those of the garden species.—Fl. July, August. Perennial.

3. *L. palustris* (Blue Marsh Vetchling).—*Leaf* of 2—4 pairs of very narrow acute leaflets; *stem* winged.—Boggy meadows; rare. A climbing plant, with bluish purple flowers, smaller than the last.—Fl. July, August. Perennial.

4. *L. marítimus* (Sea-side Everlasting Pea).—*Flower-stalks* shorter than the leaves; *leaves* of 3—8 pairs of egg-shaped leaflets; *stem* angular, not winged.—Pebbly sea-shores; rare. Stems prostrate, about a span long; flowers purple, variegated with crimson and blue.—Fl. July, August. Perennial.

*** Stalks single-flowered.*

5. *L. Áphaca* (Yellow Vetchling).—*Tendrils* without leaves; *stipules* very large, leaf-like, half-arrow-shaped.

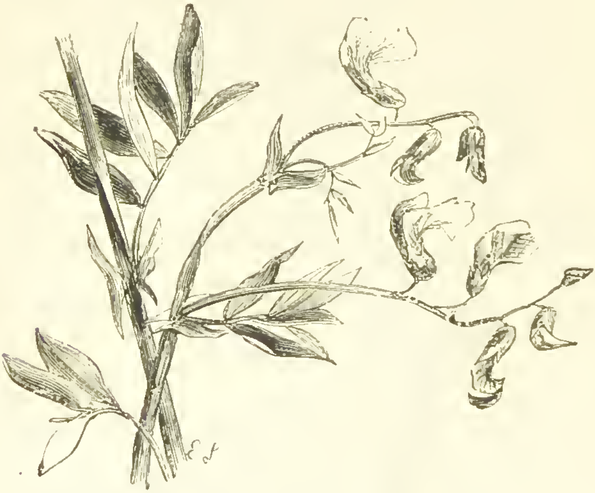


LATHYRUS PRATENSIS (*Meadow Vetchling*).

--Sandy and gravelly fields; rare. A pretty little plant, with yellow flowers, and remarkable for being entirely destitute of leaves, the place of which is supplied by a pair of stipules at the base of each tendril.—Fl. June—August. Annual.

6. *L. Nissólia* (Crimson Vetchling).—*Leaves* simple, very narrow, destitute of tendrils.—Grassy places; not common. A beautiful and well-marked species, with upright stems about a foot high, small bright crimson flowers, and narrow, grass-like foliage.—Fl. June, July. Annual.

* *L. hirsútus* (Rough-podded Vetchling), a very rare species, has its *flowers* in pairs; pale blue, with a crimson standard, and hairy *legumes.*

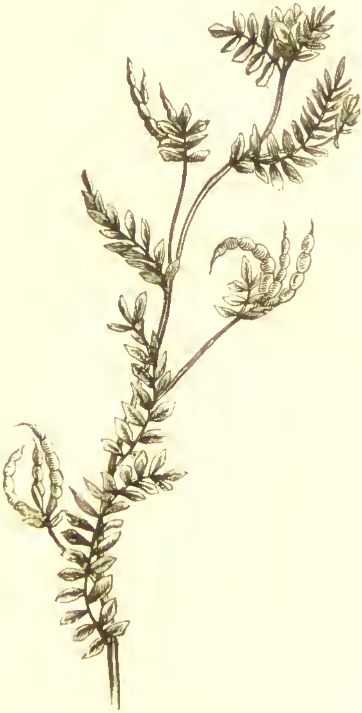


ÓROBUS TUBERÓSUS (*Tuberous Bitter Vetch*).

15. Órobus (*Bitter Vetch*).

1. *O. tuberósus* (Tuberous Bitter Vetch).—*Leaves* of 2—4 pairs of oblong leaflets, which are glaucous be-

neath; *stipules* half-arrow-shaped; *stem* simple, erect, winged.—Woods; not uncommon, especially in the west of England. A pretty spring Vetch, with clusters of blue and purple flowers in the axils of the leaves, growing in similar situations with the Wood Anemone, but appearing somewhat later. It may at once be distinguished from any of the true Vetches by its being destitute of tendrils, the place of which is supplied by a soft bristle-like point. The roots are tuberous, and are "eaten by the Highlanders, under the name of



ORNÍTHOPUS PERPUSILLUS (*Common Bird's-foot*).

Cormeille, a very small quantity being said to allay and prevent hunger." (*Sir W. J. Hooker.*)—Fl. May, June. Perennial.

* Another species of Órobus is a native of Britain; *Ó. niger* (Black Bitter Vetch), a rare Scottish plant, with very narrow *stipules*, and a branched *stem*, which is angular, but not winged.

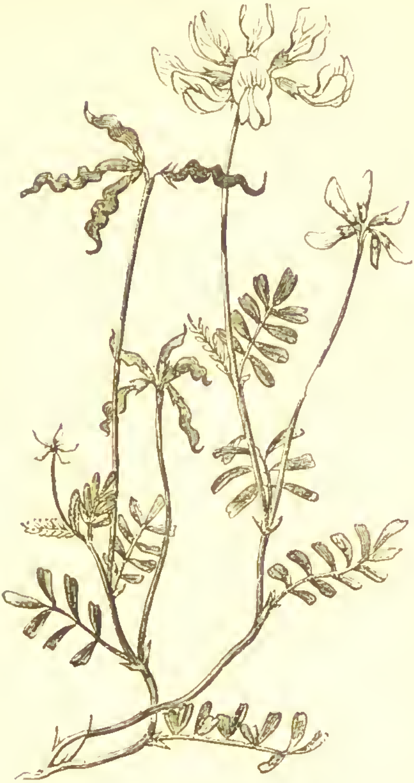
16. ORNÍTHOPUS (*Bird's-foot*).

1. *O. perpusillus* (Common Bird's-foot).—The only British species.—Sandy heaths; common. A minute and very beautiful plant, with a spreading prostrate *stem*, downy *leaves* of 6—12 pairs of leaflets, and an odd one; heads of exceedingly small cream-coloured *flowers*, veined with crimson, with a leaf at the base of each head; and jointed *legumes*, which become curved as they ripen, and bear a singular resemblance to a bird's foot.—Fl. June—August. Perennial.

* *Arthrolóbium ebracteátum* (Sand Joint-Vetch), a little plant, in many respects similar to the last, has been found in the Scilly Islands. It may be distinguished by having no floral leaf.

17. HIPPOCRÉPIS (*Horse-shoe Vetch*).

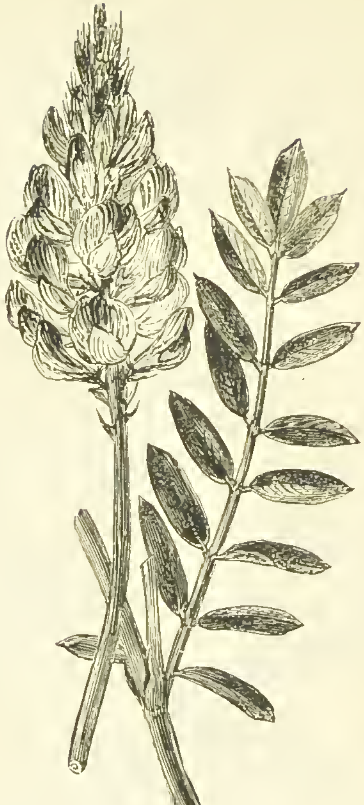
1. *H. comósa* (Tufted Horse-shoe Vetch).—The only British species.—Common on chalky banks. A low tufted plant, with much-branched *stems*, which are woody at the base, and elegant *leaves*, composed of 6—12 narrow leaflets. The umbels of yellow *flowers* might be mistaken for those of *Lotus corniculatus*, but for the curious structure of the *seed-vessels*, which are shaped like a series of horse-shoes united by their extremities.—Fl. May—August. Perennial.



HIPPOCRÉPIS COMÓSA (*Tufted Horse shoe Vetch*)

18. ONÓBRYCHIS (*Saint-foin*).

1. *O. sativa* (Common Saint-foin).—The only British species.—Chalky and limestone hills; not uncommon. A handsome plant, often cultivated as fodder in dry, chalky and gravelly soils. The *stems* are 1—2 feet long; the *leaves* are composed of 8—12 pairs of oblong



ONÓBRYCHIS SATÍVA (*Common Saint-foin*).

leaflets, with an odd one, and the *flowers*, which grow in clusters, or rather spikes, are crimson, variegated with pink and white.—Fl. June, July. Perennial.

ORD. XXVI.—ROSACEÆ.—THE ROSE TRIBE.

Calyx most frequently 5-lobed, sometimes 4, 8, or 10-lobed; *petals* 5, inserted on the calyx, regular; *stamens* varying in number, generally more than 12, inserted on the calyx, curved inwards before the expansion of the petals; *carpels* many, or solitary, either distinct, or combined with each other and with the calyx; *styles* distinct, often lateral; *fruit* either a *drupe* (cherry, or plum),—an assemblage of erect capsules opening at the side,—a number of nut-like seeds inserted into a fleshy receptacle (Strawberry, Blackberry),—enclosed in the fleshy tube of the calyx (hip of the Rose),—or a *pome* (apple).—A large and important Order, containing about a thousand species, many of which, either in a wild or cultivated state, produce excellent fruit. Cherries, Plums, Almonds, Peaches, Nectarines, Apricots, Strawberries, Raspberries, Blackberries, Apples, Pears, and Quinces, all belong to this Order. It is to be noted, however, that valuable as these fruits are, the leaves, bark, flowers, and seeds, of many, abound in a deadly poison, called hydrocyanic or prussic acid. The variety of form displayed by the fruit of the Rose Tribe has afforded a facility for subdividing the Order into several Sub-orders, or Groups, the characters of which are subjoined.

Sub-order I.—AMYGDALEÆ.—*The Almond Group.*

In plants belonging to this division, the pistil is solitary, and the fruit when ripe is a *drupe*, that is, a single seed enclosed in a hard case, which is itself surrounded by a fleshy or juicy pulp, with an external rind, or cuticle; the bark often yields gum, and prussic acid is generally abundant in the leaves and seeds. They are shrubs or trees, and inhabit the cold and temperate regions of the northern hemisphere. Examples of the deadly properties residing in these plants are afforded by the leaves of the common Laurel, *Prunus Lauro-cérasus,* even the vapour of which is destructive to insect life. The oil of Bitter Almonds is extremely poisonous, and many instances are recorded of its fatal effects. But notwithstanding the presence of this destructive principle in the leaves and other parts of the trees belonging to this division, the fruit is, with the exception of the Laurel, harmless, or even a nourishing food. *Amýgdalus communis,* the Almond-tree, grows naturally in Barbary, and in Asia, from Syria to

Affghanistan, and is extensively cultivated in the south of Europe. There are two varieties of the tree, one yielding the sweet, the other the bitter Almond. Jordan Almonds, which are considered the best, are brought from Malaga ; bitter Almonds are imported from Mogadore. The varieties of *Amýgdalus Pérsica* produce the Peach, Nectarine, and Apricot. *Prunus doméstica*, and its varieties, afford Plums of many kinds. *P. Lusitánica* is well known by the name of Portugal Laurel.—(*See* "Forest Trees," vol. i. pp. 237—274.)

1. PRUNUS (Plum and Cherry).—*Nut* of the *drupe* smooth, or slightly seamed.—(Name from the Greek *prouné*, a plum : *Cérasus*, a name sometimes given to one division of this genus, is derived from *Cerasus*, a city of Pontus, whence the Roman general Lucullus introduced a superior kind, B. C. 67.)

Sub-order II.—SPIRÉIDÆ.—*Meadow-sweet Group.*

This division contains a limited number of herbaceous or shrubby plants, which bear their seeds in dry, erect capsules, opening at the side, termed *follicles*. Several species of *Spiræa* are ornamental shrubs, and are commonly cultivated in gardens.

2. SPIRÆA (Meadow-sweet, Dropwort).—*Calyx* 5-cleft ; *stamens* numerous ; *follicles* 3—12, bearing few seeds. (Name of Greek origin.)

Sub-order III.—POTENTÍLLIDÆ.—*The Strawberry Group.*

In this division the form of the fruit varies much more than in either of the preceding ; but in every case the calyx is permanent, and contains a number of nutlike seeds, with or without tails, placed on a pulpy, spongy, or dry receptacle ; in the Bramble, each seed is enveloped in pulp, the fruit being an assemblage of small drupes; in Agrimony alone there are but two seeds, which are enclosed in a bristly, hardened calyx. The plants in this division are mostly herbaceous, but some few are shrubs. None of them are injurious; the leaves and roots of some are astringent, or tonic. The fruit of the Strawberry, Raspberry, and Bramble, is too well known to need any description.

3. DRYAS (Mountain Avens).—*Calyx* in 8—10 equal divisions, which are all in one row; *petals* 8—10; *styles* finally becoming feathery tails, not hooked at the extremity. (Name from the Greek *drys*, an Oak, from a fancied resemblanee between the leaves.)

4. GÉUM (Avens).—*Calyx* 10-cleft, in two rows, the outer division smaller; *petals* 5; *styles* finally becoming jointed awns hooked at the extremity. (Name from the Greek *geyo*, to taste.)

5. POTENTILLA (Cinquefoil).—*Calyx* 10-cleft, in 2 rows, the outer divisions smaller; *petals* 5; *seeds* without awns, on a dry receptacle. (Name from the Latin *potens*, powerful, from the powerful properties supposed to reside in some species.)

6. TORMENTILLA (Tormentil).—*Calyx* 8-cleft, in 2 rows; the outer divisions smaller; *petals* 4; *seeds* without awns, on a dry receptacle. (Name from the Latin *tórmina*, dysentery, for which disease it was considered a specific.)

7. SIBBALDIA.—*Calyx* 10-cleft, in 2 rows, the outer divisions smaller; *petals* 5; *stamens* 5; *seeds* about 5, without awns, on a dry receptacle. (Named after Robert Sibbald, a Scottish naturalist of the 17th century.)

8. CÓMARUM (Marsh Cinquefoil).—*Calyx* 10-cleft, in 2 rows, the outer divisions smaller; *petals* 5; *seeds* without awns, on an enlarged spongy receptacle. (From the Greek *cómaros*, the name of a plant very distinct from the present.)

9. FRAGARIA (Strawberry).—*Calyx* 10-cleft, in 2 rows, the outer divisions smaller; *petals* 5; *seeds* without

awns, on an enlarged, fleshy receptacle. (Name from the Latin *fragum*, a Strawberry, and that from *fragrans*, fragrant.)

10. RÚBUS (Bramble).—*Calyx* 5-cleft; *petals* 5; *fruit* an assemblage of small drupes, arranged on and around a spongy receptacle. (Name from the Latin *ruber*, red.)

11. AGRIMÓNIA (Agrimony).—*Calyx* 5-cleft, top-shaped, covered with hooked bristles; *petals* 5; *stamens* about 15; *seeds* 2, enclosed in the tube of the hardened calyx. (Name of Greek origin.)

Sub-order IV.—SANGUISÓRBIDÆ.—*The Burnet Group.*

The plants of this group would seem at first sight to be scarcely connected with those already described. It will, however, be found, on a close examination, that in many important respects they agree with the characters given in the description of the *Order* ROSACEÆ, though in others scarcely less important they appear to differ; these are the absence of petals, and the hardened calyx of the fruit containing 1 or 2 nut-like seeds. The calyx is 3—8 cleft, and the stamens are usually few in number. The plants are either herbaceous or shrubby, and, like those of the last group, their properties are astringent, or tonic. In some species the flowers grow in round or oblong heads.

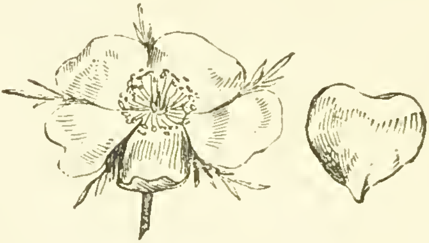
12. ALCHEMILLA (Lady's Mantle).—*Calyx* 8-cleft, in 2 rows, the outer divisions smaller; *petals* 0; *stamens* 1—4, opposite the smaller divisions of the calyx; *seeds* 1 or 2, enclosed in the hardened calyx. (Name from its pretended value in Alchemy.)

13. SANGUISORBA (Burnet).—*Calyx* 4-cleft, coloured (not green), with 2—4 scale-like bracts at the base: *petals* 0; *stamens* 4; *seeds* 1 or 2, enclosed in the tube of the hardened calyx. (Name from the Latin *sanguis*, blood, and *sorbeo*, to staunch, from the supposed virtues of the plant.)

14. Potérium (Salad Burnet).—*Stamens* and *pistils* in separate flowers; *flowers* in heads; *calyx* 4-cleft, coloured, with 3 scale-like bracts at the base; *petals* 0; *stamens* numerous; *stigma* tufted. (Name from the Greek *potérion*, a drinking-cup, the plant being used in the preparation of *Cool-tankard.*)

Sub-order V.—Rósidæ.—*The Rose Group.*

This division contains the genus from which both the *Order* and *Sub-order* take their names. Here, also, the fruit furnishes the main characteristic; it consists of a number of nut-like hairy seeds, enclosed within the fleshy tube of the calyx, which is contracted at the top. The Roses are shrubs more or less prickly (not thorny), with pinnate leaves. The number of species is very great, of varieties incalculable, the beauty and fragrance of the flowers having rendered them favourite objects of cultivation from a very early period. The most fragrant of the British Roses are the common Dog-rose, *Rosa canína*, and the Scotch Rose, *R. spinosissima*, the latter being the origin of the numerous varieties of double Scotch Rose. From the petals of *R. centifolia* and *R. Damascéna* are made Rose-water, and Attar of Roses. It is stated that 100,000 Roses, the produce of 10,000 bushes, yield only nine drams of Attar. Some species, as *R. rubiginosa*, Sweet-brier, are copiously fur-



nished with glands which secrete a fragrant viscid fluid. From the pulp of the fruit, called a hip, is made a conserve, which is used in the preparation of various medicines ; and the woody stems of the Dog-rose have of late years been much sought after for making walking sticks.

15. Rosa (Rose).—*Calyx* urn-shaped, contracted at the mouth, and terminating in 5, often leaf-like, divisions ; *petals* 5 ; *stamens* numerous ; *seeds* numerous. (Name from the Latin, *rosa*, and that from the Greek, *rhodon*, its ancient names.)

Sub-order VI.—Pomeæ.—*The Apple Group.*

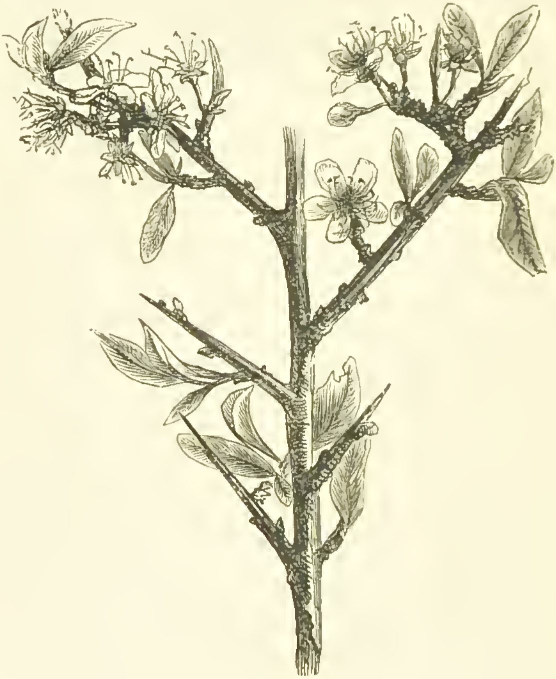
In the plants of this division the fruit is what is called a *pome ;* that is, the tube of the calyx enlarges and becomes a fleshy or mealy fruit, enclosing 1—5 cells, which are either horny, as in the Apple, or bony, as in the Medlar. The Apple Group contains many well-known fruit-trees, namely the Apple, Pear, Quince, Medlar, Service, Mountain-Ash, and Hawthorn. The seeds, and occasionally the flower and bark of some, yield prussic acid. All the cultivated varieties of Apple are derived from the wild Apple, or Crab, *Pyrus Malus ;* the garden Pears from a thorny tree, with hard astringent fruit, *Pyrus commúnis.* The wood of the Pear is very close-grained, and is sometimes used by wood-engravers. The fruit of the Mountain Ash, and some other species, yields malic acid, and the leaves prussic acid, in as great abundance as the Laurel. All the plants of this division are either trees or shrubs.

16. Pyrus (Pear, Apple, Service, and Mountain Ash). —*Calyx* 5-cleft ; *petals* 5 ; *styles* 2—5 ; *fruit* fleshy, or juicy, with 5 horny, 2-seeded cells. (Name from the Latin *pyrus*, a pear.)

17. Méspilus (Medlar).—*Calyx* 5-cleft, divisions leaf-like ; *petals* 5 ; *styles* 2—5 ; *fruit* fleshy, top-shaped,

terminating abruptly, with the ends of the bony cells exposed. (Name from the Greek *mespilé,* a medlar.)

18. Cratægus (Hawthorn).—*Calyx* 5-cleft, divisions acute; *petals* 5; *styles* 1—5; *fruit* oval, or round, concealing the ends of the bony cells. (Name from the Greek *cratos,* strength, in allusion to the hardness of the wood.)



PRUNUS SPINOSA (*Sloe, or Blackthorn*).

1. Prunus (*Plum and Cherry*).

* *Fruit covered with bloom; young leaf with the halves rolled together.*

1. *P. communis* (Sloe, or Blackthorn; Bullace and Plum).—*Flowers* solitary or in pairs.—Under this name

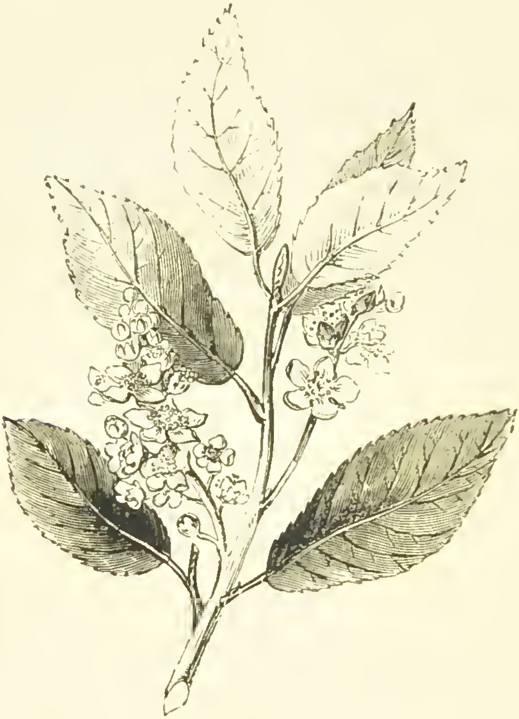
are now included the three following varieties, which were formerly considered to be distinct species. *P. spinosa* (Sloe, or Blackthorn).—*Branches* very thorny; *leaves* narrow, elliptical, smooth above, slightly downy near the midrib below; *flowers* mostly solitary.—Woods and hedges; abundant. A well-known thorny bush, which probably derived its name Blackthorn from the hue of its bark, which is much darker than that of the Hawthorn. The flowers appear in March and April, and usually before the leaves have begun to expand. The latter are used to adulterate tea. The fruit is small, nearly round, and so austere that a single drop of its juice placed on the tongue will produce a roughness on the throat and palate which is perceptible for a long time. It enters largely into the composition of spurious port wine. — Fl. March—May. Shrub: *P. insitítia* (Bullace).—*Branches* ending in a thorn; *leaves* elliptical, downy beneath; *flowers* in pairs.—Woods and hedges. Larger than the last, and producing a more palatable fruit. In *P. doméstica* (Wild Plum), the branches are thornless, and the fruit oblong. From one or other of these three all the cultivated varieties of Plum are supposed to have originated.—Fl. April, May. Small tree.

** *Fruit without bloom; young leaf with the halves folded together.*

2. *P. Padus* (Bird-Cherry).—*Flowers* in clusters; *leaves* narrow egg-shaped; *fruit* oblong.—A handsome shrub, or small tree, not uncommon in the north of England in a wild state, and very generally admitted into gardens and shrubberies elsewhere. The clusters of flowers and drupes are not unlike those of the Portugal Laurel, but the leaves are not evergreen.—Fl. white, May. Small tree.

3. *P. ávium* (Wild Cherry).—*Flowers* in umbels; *leaves* drooping, suddenly pointed, downy beneath; *calyx-tube* contracted above; *fruit* heart-shaped.—

Woods and hedges; common. A highly ornamental tree, not only on account of its elegant white flowers in spring, but even more so in autumn, when its leaves assume a bright crimson hue, which distinguishes them among all the varied tints of the fading year. The fruit is small, bitter, black, or red, and as soon as it is ripe is greedily devoured by birds.—Fl. May. Lofty tree.



PRUNUS PADUS (*Bird-Cherry*).

5. *P. Cérasus* (Red Cherry).—*Flowers* in umbels; *leaves* not drooping, smooth on both sides; *calyx-tube* not contracted; *fruit* round.—Woods and hedges. This

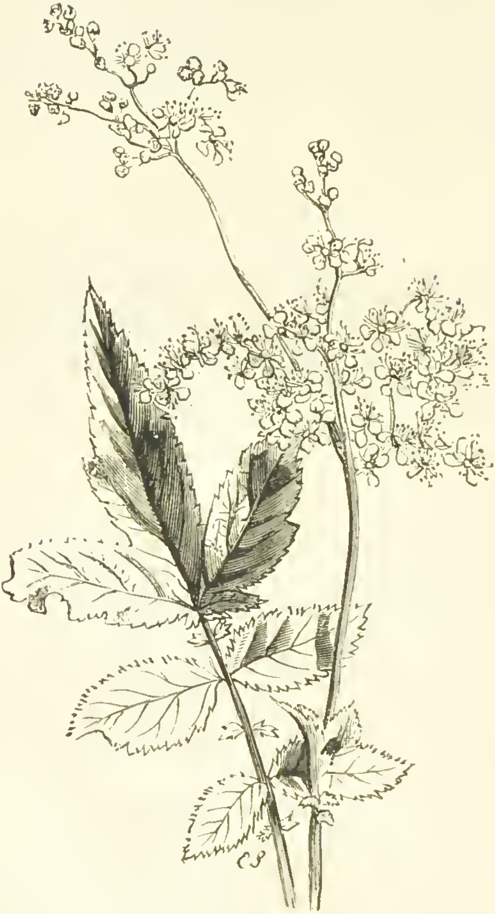
species is distinguished from the preceding by the characters given above, and by its lower stature, which is said not to exceed 8 feet, while the other attains a height of 30—40 feet. The fruit also differs in being juicy, acid, and always red. Some botanists, however, consider them mere varieties of the same tree. From one or other all the cultivated kinds of Cherry are derived. —Fl. May. Shrub.

2. Spiræa (*Meadow-sweet*).

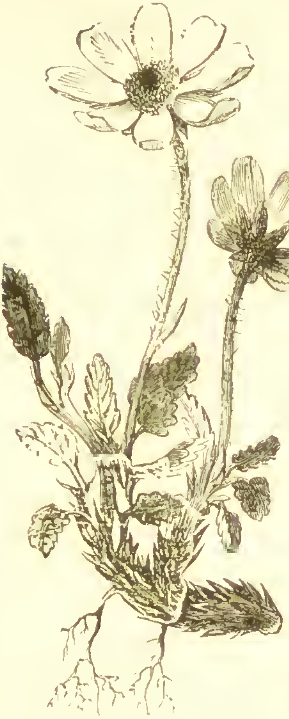
1. *S. Ulmária* (Meadow-sweet, Queen of the Meadows).—Herbaceous; *leaves* pinnate, the alternate leaflets smaller, white with down beneath, terminal leaflet very large and lobed; *flowers* in compound erect cymes. Moist meadows; common. A tall plant, 2—4 feet high, with densely crowded yellowish-white flowers, which are elegant and fragrant.—Fl. July, August. Perennial.

2. *S. Filipéndula* (Dropwort).—Herbaceous; *leaves* pinnate, with the alternate leaflets smaller, all deeply cut into narrow, serrated segments; *flowers* in a panicled cyme.—Dry pastures, especially on a limestone soil, about a foot high; well distinguished from the last by its elegantly cut foliage, and less crowded flowers, the petals of which are pink externally before they expand, and when open are white and scentless. A variety with double flowers is common in gardens.—Fl. July—September. Perennial.

* *S. salícifolia* (Willow-leaved Spiræa), is a shrubby species, with spike-like clusters of rose-coloured flowers, and simple (not pinnated) leaves. It is occasionally found in Scotland, Wales, and the north of England, but is not considered to be a native. Several other species of *Spiræa* are common in gardens, to which they are very ornamental. They are easily propagated by cuttings, and will grow in any moist situation.



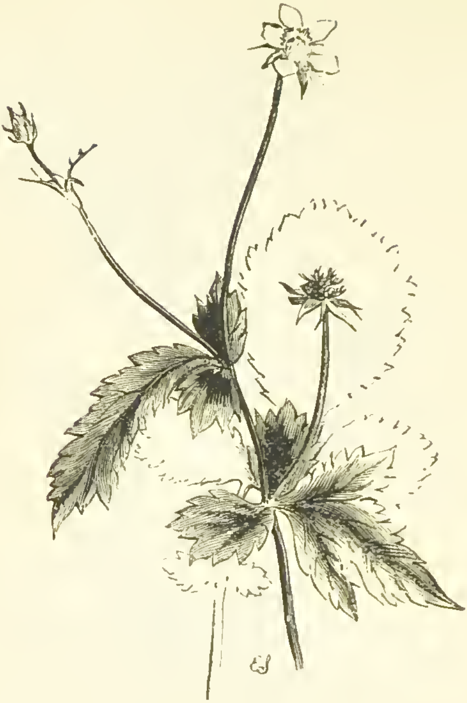
SPIRÆA ULMARIA (*Meadow-sweet, Queen of the Meadows*)



DRYAS OCTOPÉTALA (*Mountain Avens*).

3. DRYAS (*Mountain Avens*).

D. octopétala (Mountain Avens).—The only British species; not uncommon in the mountainous parts of England, Scotland, and Ireland, and at once distinguished from all other plants of the Order by its oblong deeply-cut leaves, which are white with woolly down beneath, and by its large and handsome white flowers, each of which has 8 petals.—Fl. June, July. Perennial.



GÉUM URBÁNUM (*Common Avens, Herb Bennet*).

4. GÉUM (*Avens*).

1. *G. urbánum* (Common Avens, Herb Bennet).—*Flowers* erect ; *awns* rigid ; *root-leaves* pinnate, with smaller leaflets at the base ; *stem-leaves* ternate.—Hedges and thickets ; common. A somewhat slender, little-branched plant, 1—2 feet high, with yellow flowers, which are less conspicuous than the round heads of awned seeds which succeed them ; the stipules are large, rounded, and cut.—Fl. June—August. Perennial.

2. *G. riválé* (Water Avens).—*Flowers* drooping ;

awns feathery; *root-leaves* pinnate, with the alternate leaflets and those at the base smaller; *stem-leaves* ternate.—Damp meadows, and wet mountainous woods; not unfrequent. Much stouter than the last, and well distinguished by the above characters, as well as by its larger flowers, of which the calyx is deeply tinged with purple, and the petals are of a dull purplish hue, with darker veins.—Fl. June, July. Perennial.

* A variety, *G. intermedium,* is sometimes found, which appears to partake of the characters of both the above species.

5. POTENTILLA (*Cinquefoil*).

* *Leaves pinnate.*

1. *P. Anserína* (Silver-weed, Goose-grass).—*Leaves* pinnate, the alternate leaflets smaller; *leaflets* sharply cut, silky on both sides, especially beneath; *flower-stalks* solitary, axillary.—Waste ground; common. Well marked by its creeping stem, its elegantly cut silky foliage, and showy yellow flowers.—Fl. June, July. Perennial.

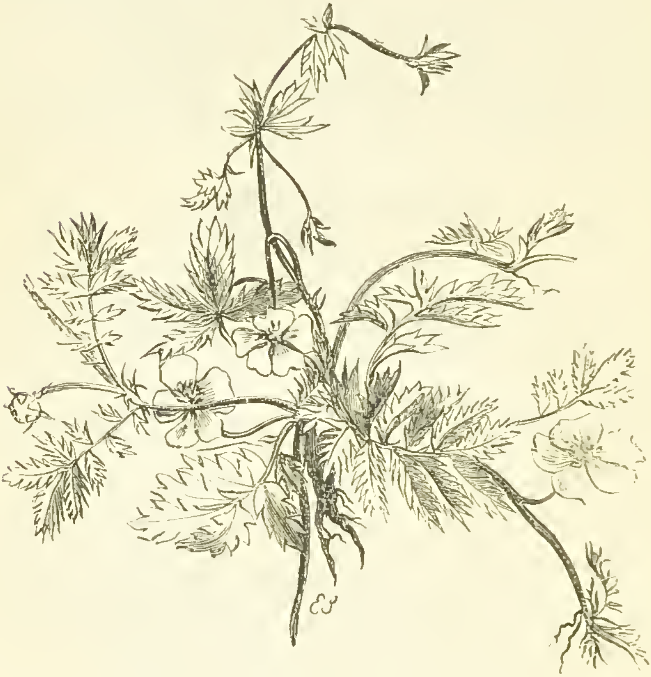
* To the division with pinnate leaves belong *P. fruticosa* (Shrubby Cinquefoil), a bushy species, 3—4 feet high, with hairy leaves and large yellow flowers, which last grow several together at the end of the stems: bushy places; rare; and the yet more uncommon species, *P. rupestris* (Rock Cinquefoil), which has large white flowers, and is found only in Montgomeryshire.

** *Leaflets 5 on a stalk* (*quinate*).

2. *P. reptans* (Creeping Cinquefoil).—*Stem* creeping, rooting at the joints; *leaves* stalked; *leaflets* inversely egg-shaped, tapering at the base, serrated; *flower-stalks* solitary.—Meadows and way-sides; common. *Flowers* handsome, yellow, on long stalks.—Fl. June—August. Perennial.

3. *P. argéntea* (Hoary Cinquefoil).—*Stem* prostrate;

leaflets inversely egg-shaped, cut, white and downy beneath, their edges rolled back.—Pastures and roadsides, on a gravelly soil; not common. *Flowers* yellow, small, several together at the ends of the stems.—Fl. June. Perennial.



POTENTILLA ANSERÍNA *and* P. REPTANS.

4. *P. verna* (Spring Cinquefoil).—*Stem* prostrate; *leaflets* sometimes 7 on the root-leaves, inversely egg-shaped, serrated towards the end, hairy on the edge and ribs beneath, not downy.—Dry pastures in various parts of England, but not common. A small woody plant, about 5 inches long, with yellow flowers, 2—3 together at the ends of the stems.

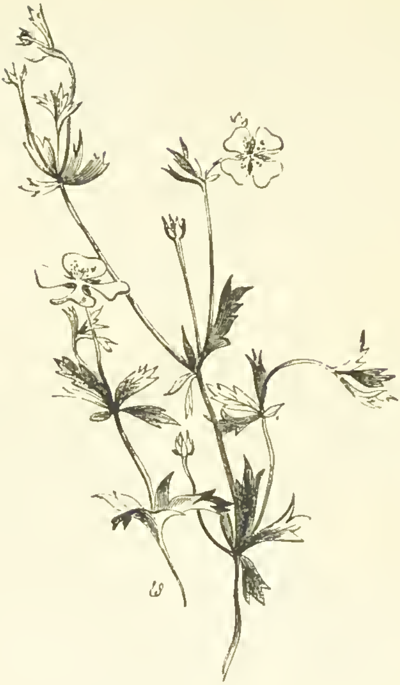
* *P. alpestris* (Alpine Cinquefoil), is considered by some botanists a variety of the preceding; by others, a distinct species. It is somewhat larger, and the stem has a more upright growth. *P. opáca* (Saw-leaved Hairy Cinquefoil) occurs only on the hills of Clova and Braes of Balquidder, Scotland. The leaves are deeply cut throughout, and the stem is stouter than in the two last, but in other respects it is very like.

*** *Leaves 3 on a stalk, ternate.*

5. *P. Fragariastrum* (Strawberry-leaved Cinquefoil). —*Stem* prostrate; *leaflets* inversely egg-shaped, cut, silky on both sides; *petals* equalling the calyx in length. —Banks and hedges; abundant. One of the earliest spring flowers, often confounded by young botanists with the wild Strawberry, *Fragaria vesca*. It may, however, be always distinguished by its prostrate mode of growth, and short, notched petals; the flower-stalks of the Strawberry being erect, and the petals entire.—Fl. January—May. Perennial.

* *P. tridentáta* (Three-toothed Cinquefoil), a rare species, found only on the Clova hills, is distinguished from the last by its oblong, wedge-shaped leaflets, each of which ends in 3 points. The petals are white, and longer than the calyx.

Upwards of a hundred and fifty species of *Potentilla* are described by botanists, inhabiting both the Eastern and Western Hemispheres, and preferring, generally, moist or rocky situations. They are all easy of cultivation, and some of them are handsome when in flower. They will grow in any common garden soil, and are easily increased, either by dividing the plants or by seed.

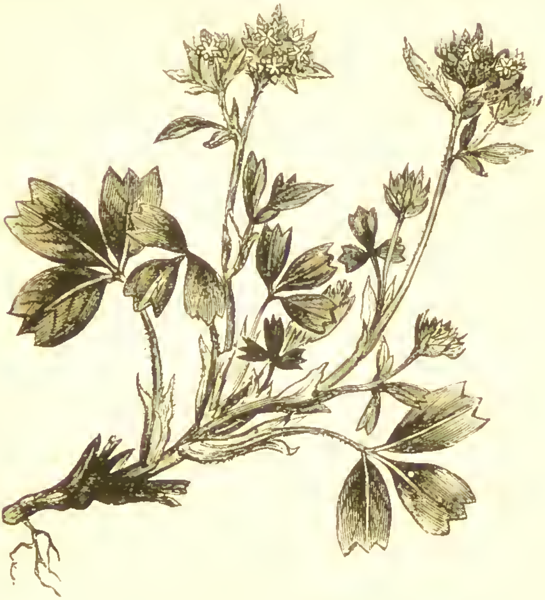


TORMENTILLA OFFICINÁLIS (*Common Tormentil*).

6. TORMENTILLA (*Tormentil*).

1. *T. officinális* (Common Tormentil).—*Leaves* of 3 leaflets, ternate, sessile ; *root-leaves* of 5 leaflets (quinate) stalked ; *leaflets* narrow, acute, cut ; *stem* ascending.—Banks and woods ; common. Closely allied to the preceding genus, from which it is distinguished by its having only 4 petals ; but even this character is not constant. A small plant, with bright yellow flowers, and very woody roots, which latter are astringent, and are employed in medicine. Specimens are not uncommon in which the stem is prostrate ; this is by some botanists considered a distinct species, and is called

T. reptans (Trailing Tormentil).—Fl. all the summer. Perennial.



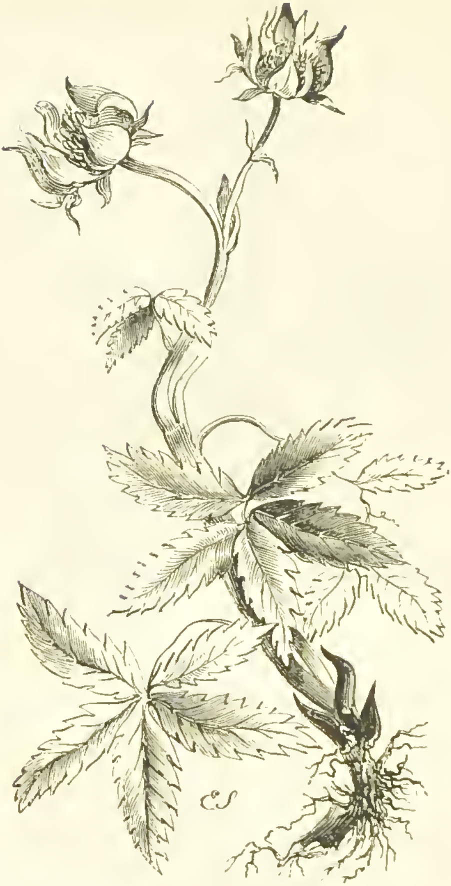
SIBBALDIA PROCUMBENS (*Procumbent Sibbaldia*).

7. SIBBALDIA.

1. *S. procumbens* (Procumbent Sibbaldia).—The only British species.—A small prostrate plant, with ternate, hairy leaves, and yellowish flowers, growing abundantly on the summits of the Highland mountains. The leaflets are wedge-shaped, and end in 3 points. The number of stamens and pistils is very variable.—Fl. June, July. Perennial.

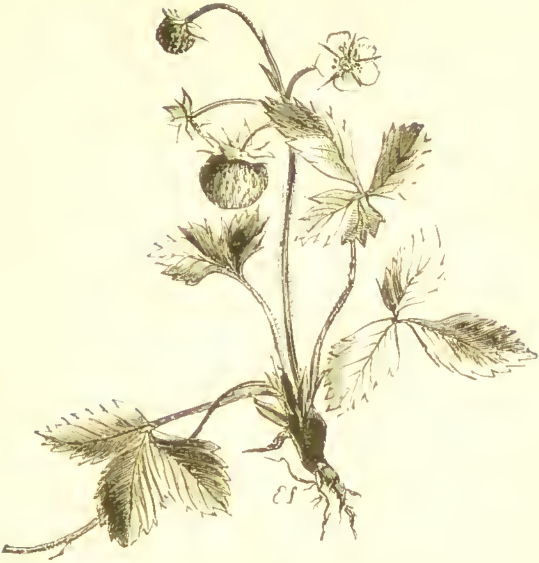
8. CÓMARUM (*Marsh Cinquefoil*).

1. *C. palustré* (Marsh Cinquefoil).—The only species. —A herbaceous bog-plant, growing about a foot high,



CÓMARUM PALUSTRÉ (*Marsh Cinquefoil*).

with much of the habit of a Potentilla, but stouter. The lower *leaves* are usually of 7 long, cut leaflets, the upper of 5 or 3; and each *stem* bears several *leaves*, and a number of large dingy purple *flowers*.—Fl. July. Perennial.



FRAGARIA VESCA (*Wood Strawberry*).

9. FRAGARIA (*Strawberry*).

1. *F. vesca* (Wood Strawberry).—*Calyx* of the fruit bent back ; *hairs* on the general flower-stalk widely spreading, on the partial flower-stalks close pressed, silky.—Woods and thickets ; common. A well-known plant, with bright-green hairy leaves, rooting scions, and erect flower-stalks. By these last two characters, as well as by the drooping fruit, this plant may be distinguished from *Potentilla Fragariastrum* (Strawberry-leaved Cinquefoil), which is often mistaken for it by young botanists. The Strawberry derives its name either from the custom of laying straw between the rows of plants in gardens, or from the habit adopted by children of stringing the fruit on straws of grass.—Fl. May—July. Perennial.

* *F. elátior* (Hautboy Strawberry), which is occasionally found in situations where it is apparently, but not really, wild, has its flower-stalks clothed throughout with spreading hairs. It is also larger and more hairy than the last. Some plants of this species bear flowers with stamens only, and consequently produce no fruit. This is also the case with some garden varieties, a fact which should be attended to by growers of Strawberries.

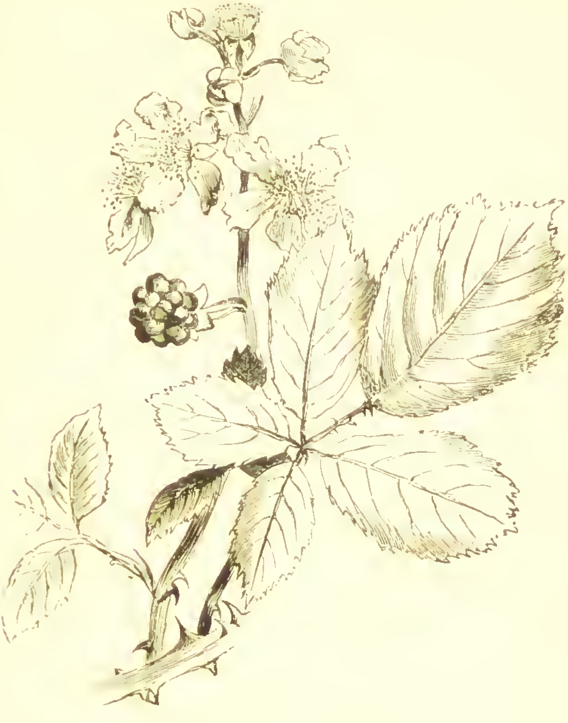
10. Rubus (*Bramble*).

1. *R. Idæus* (Raspberry).—*Stem* nearly erect, round, downy and prickly; *leaves* pinnate, of 5 leaflets, which are white, and very downy beneath; *flowers* drooping; *fruit* downy.—Rocky woods; not very common. The origin of all the varieties of garden raspberry, from which it differs principally in the size of the fruit, which is scarlet, and of an agreeable flavour.—Fl. May, June. Shrub.

2. *R. fruticósus* (Common Bramble, or Blackberry). —*Stem* arched, angular, prickly, rooting; *leaves* of 5 crowded leaflets; *flowers* erect, in compound panicles; *calyx* of the fruit spreading, or bent back.—Common everywhere. This description includes a large number of species and varieties to which names have been severally given, but it is not here thought necessary to describe the characters at length, the genus being confessedly a difficult one, and on other accounts uninviting to the young botanist.—Most of the species flower from July to August, and ripen their fruit in September and October. Shrub.

3. *R. cæsius* (Dewberry).—*Stem* prostrate, nearly round, prickly below, bristly above; *leaves* of 3 or 5 leaflets; *panicle* simple; *calyx* clasping the fruit.—Thickets and borders of fields; not uncommon. In this species the fruit, which consists of a few large drupes,

is half enclosed in the calyx, and is covered with a grey bloom.—Fl. June—August. Shrub.



RUBUS FRUTICÓSUS (*Blackberry*).

4. *R. saxátilis* (Stone Bramble).—*Stem* herbaceous, rooting; *prickles* few, small; *leaves* of 3 leaflets; *flowers* few together.—Stony, mountainous places, especially in the north. A small herbaceous species, about a span high, with greenish-yellow flowers, and scarlet fruit consisting of 1—4 large drupes.—Fl. July, August. Perennial.

5. *R. Chamæmórus* (Cloudberry).—*Stem* herbaceous, without prickles, 1-flowered; *leaves* simple, lobed.—A very distinct species, growing in the mountainous parts of Great Britain and Ireland. About a span high, with large white or rose-coloured flowers, which are solitary, and bear the stamens and pistils on separate plants. The fruit is orange-red, and of a pleasant flavour.—Fl. June. Perennial.

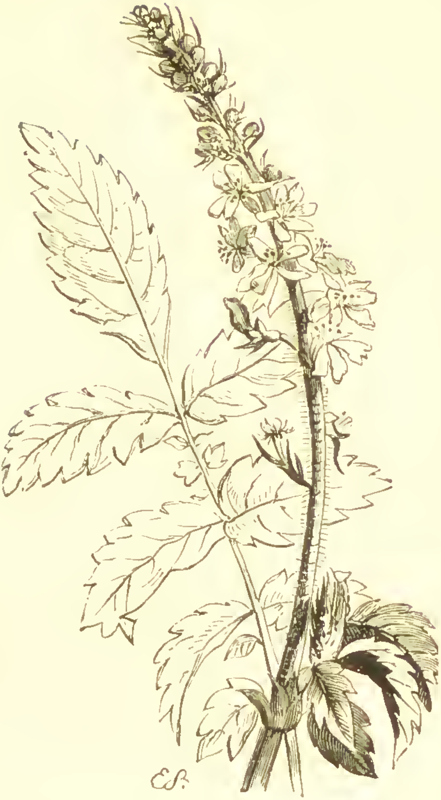
11. AGRIMÓNIA (*Agrimony*).

1 *A. Eupatória* (Common Agrimony).—The only British species.—Common in waste ground. A slender herbaceous plant, 1—2 feet high, very different in habit from any of the preceding. The *leaves* are pinnate, with the alternate leaflets smaller, and all are deeply cut. The *flowers* are yellow, and grow in long tapering *spikes*. The whole plant is covered with soft hairs, and when bruised emits a slightly aromatic scent. Its properties are said to be tonic, and on this account it is often collected by village herbalists, and made into tea.—Fl. July, August. Perennial.

12. ALCHEMILLA (*Lady's Mantle*).

1. *A. vulgáris* (Common Lady's Mantle).—*Leaves* kidney-shaped, plaited, 7—9 lobed, lobes blunt, serrated; *flowers* in loose, divided clusters.—Hilly pastures; not uncommon. A herbaceous plant, about a foot high, with large and handsome soft leaves, and numerous small, yellowish-green flowers.—Fl. June—August. Perennial.

2. *A. alpína* (Alpine Lady's Mantle).—*Leaf* of 5—7 oblong, blunt leaflets, serrated at the end, white and satiny beneath.—Mountains in Scotland and the north of England. A very beautiful plant, remarkable for the lustrous, almost metallic hue of the under side of its leaves.—Fl. July, August. Perennial.



AGRIMÓNIA EUPATÓRIA (*Common Agrimony*).

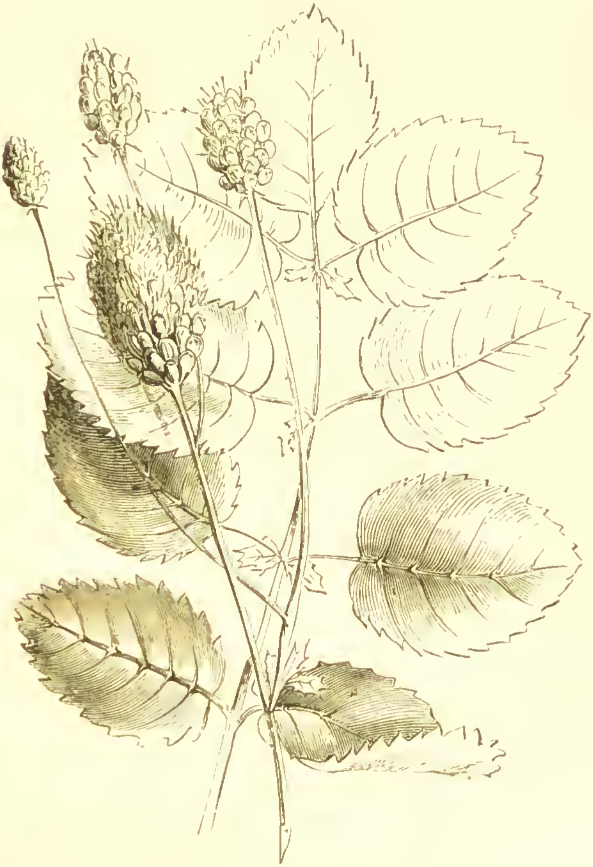
ALCHEMILLA ARVENSIS (*Field Lady's Mantle*).

3. *A. arvensis* (Field Lady's Mantle, or Parsley Piert). —*Leaves* 3-cleft, wedge-shaped, downy; *lobes* deeply cut; *flowers* tufted, sessile in the axils of the leaves.—Common everywhere. A small inconspicuous weed, 3—6 inches long, with minute greenish flowers, which are almost concealed by the leaves and their large stipules. Fl. May—August. Annual.

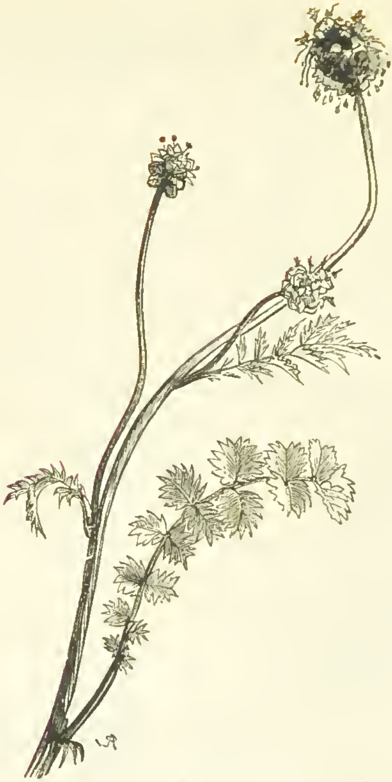
13. SANGUISORBA (*Burnet*).

1. *S. officinális* (Common Burnet).—The only British species.—A tall and not inelegant plant, with pinnate *leaves;* erect, branched *stems*, sparely clothed with

leaves ; and oblong heads of deep purple-brown *flowers.* Moist pastures ; not uncommon.—Fl. June—September. Perennial.



SANGUISORBA OFFICINÁLIS (*Common Burnet*).

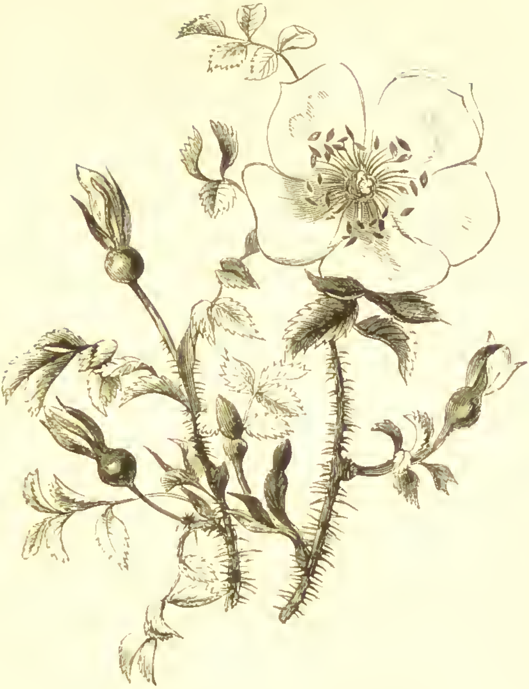


POTÉRIUM SANGUISORBA (*Salad Burnet*).

14. POTÉRIUM (*Salad Burnet*).

1. *P. Sanguisorba* (Common Salad Burnet).—Calyx of fruit nearly smooth.—Common in dry pastures, especially on chalk and limestone. Not unlike the last in habit, but much smaller. The *leaves* are pinnate, and have the taste and smell of cucumber. The upper flowers in each head bear crimson, tufted *pistils*, the lower ones 30—40 *stamens*, with very long drooping filaments.—Fl. July, August. Perennial.

2. *P. Muricatum* (Prickly Salad Burnet).—Calyx of fruit wrinkled and prickly.—Chalk pastures. Closely resembling the last.



ROSA SPINOSISSIMA (*Burnet-leaved Rose*).

15. Rosa (*Rose*).

**Shoots thickly set with bristles, mixed with nearly straight prickles.*

1. *R. spinosissima* (Burnet-leaved Rose).—*Leaflets* small, simply serrated, smooth; *calyx* simple; *fruit* nearly round.—Waste places, especially near the sea. A thick, very prickly bush, 2—4 feet high, with small, elegant foliage, and large cream-coloured flowers, which are deliciously fragrant; *fruit* dark purple or black. The origin of the garden varieties of Scotch Rose.—May, June. Shrub.

*** Shoots without bristles; prickles straight, or slightly curved.*

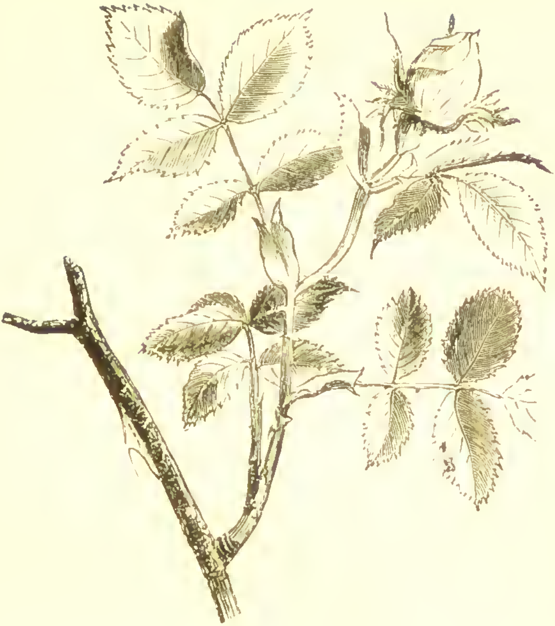
2. *R. tomentósa* (Downy-leaved Rose).—*Leaflets* doubly serrated, downy, and glandular; *calyx* pinnate.—Hedges and thickets; not very common. Distinguished by its stout and long *shoots;* downy, almost hoary, *leaves;* large, deep red *flowers*, and very long *seed-vessels*, which are usually crowned with the copiously pinnate *calyx leaves.*—Fl. June, July. Shrub.

**** Prickles, some hooked, some straight, mixed with bristles.*

3. *R. rubiginosa* (Sweet Brier).—*Leaflet* doubly serrated, hairy, glandular beneath, mostly rounded at the base; *calyx* pinnate, remaining attached to the ripe fruit; *fruit* pear-shaped when young.—Bushy places, especially on chalk. The Eglantine of the poets, but not of Milton; the "twisted Eglantine" of that author being the Woodbine or Honeysuckle. A favourite garden plant, deservedly cultivated for the sake of its deliciously fragrant foliage.—Fl. June, July. Shrub.

***** Bristles none; prickles hooked.*

4. *R. canína* (Dog Rose).—*Leaves* smooth, or slightly hairy; *calyx* pinnate, not remaining attached to the fruit; *styles* distinct.—Hedges and bushy places: abundant. This is the Common Hedge Rose, a flower belonging exclusively to summer, and welcomed at its first appearance scarcely less warmly than the early Primrose in spring. The colour of the flower varies from white to a deep blush, and the leaves also differ considerably; but the above characters will be found to include all the principal varieties.—Fl. June, July. Shrub.



ROSA CANINA (*Dog Rose*).

5. *R. arvensis* (Trailing Dog Rose).—*Prickles* on the young shoots feeble; *leaves* smooth; *calyx* slightly pinnate, not remaining attached to the fruit; *styles* united; *stigmas* forming a round head.—Woods and hedges; common in the south of England. Distinguished from all the other British species of Rose by its slender, trailing stems. The *flowers* are white and scentless, and there are fewer prickles than in most other species.—Fl. June—August. Shrub.

* Botanists describe no less than nineteen species of native Roses, but, as many of these are rare, and the characters of others are difficult to discriminate, it has

been thought best to describe here only those which are of common occurrence or otherwise remarkable.

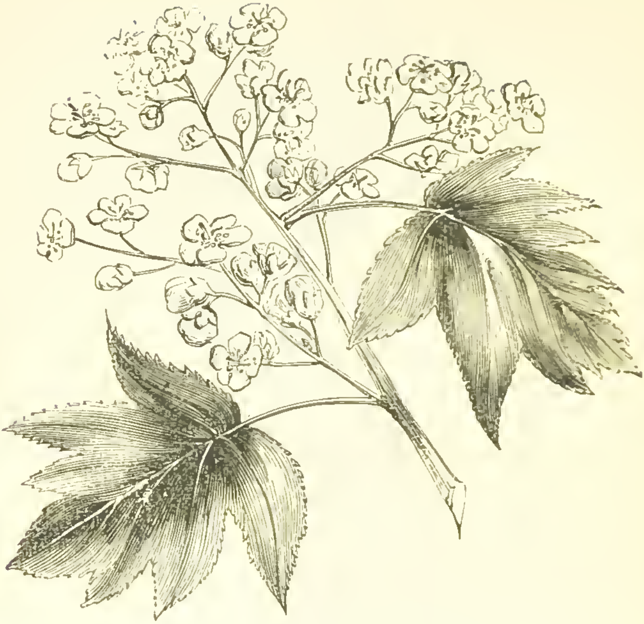
PYRUS COMMÚNIS (*Wild Pear*).

16. PYRUS (*Pear, Apple, Service, and Mountain Ash*).

1. *P. commúnis* (Wild Pear).—*Leaves* simple, egg-shaped, serrated; *flowers* in corymbs; *fruit* tapering at the base.—Woods and hedges. A small upright tree, often bearing thorns at the extremities of its branches. The seed vessel, in a wild state, is woody, austere, and worthless, yet is converted by cultivation into a most luscious fruit.—Fl. white.—April, May. Tree.

PYRUS MALUS (*Crab Apple*).

2. *P. Malus* (Crab Apple).—*Leaves* simple, egg-shaped, serrated, *flowers* in a sessile umbel ; *styles* combined below ; *fruit* with a hollow beneath.—Woods and hedges. A small spreading tree, with thornless branches, umbels of white flowers delicately shaded with pink, and nearly round fruit, which is intensely acid. It was formerly much used in making verjuice, and in the preparation of pomatum. so called from *pomum*, an apple.—Fl. May. Tree.



PYRUS TORMINÁLIS (*Wild Service Tree*).

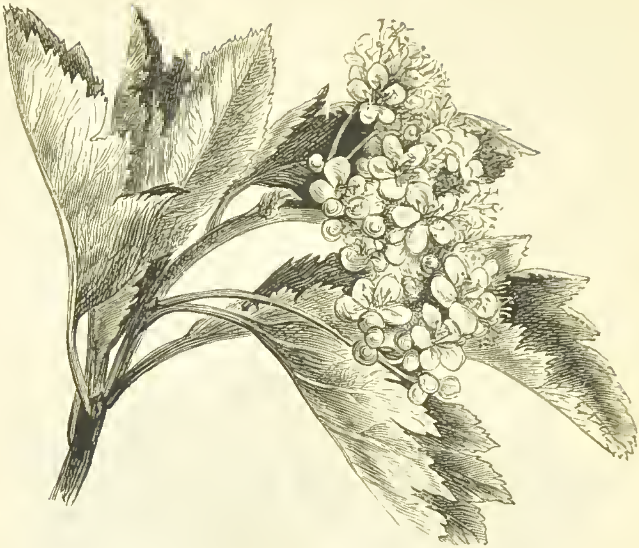
3. *P. torminális* (Wild Service Tree).—*Leaves* egg-shaped, with several deep, sharp lobes; *flowers* in corymbs.—Woods and hedges in the south of England. A small tree, with leaves shaped somewhat like those of the Hawthorn, but larger, and white flowers, which are succeeded by brownish, spotted, berry-like fruit.—Fl. May. Tree.

4. *P. aucupária* (Fowlers' Service, Mountain Ash, Quicken, or Rowan Tree).—*Leaves* pinnate, serrated; *flowers* in corymbs; *fruit* nearly round.—Mountainous woods. One of the most elegant of British trees, conspicuous in the flowering season by its delicate green foliage, and large *corymbs* of blossom, and in autumn by its clusters of scarlet berry-like *pomes*, which are greedily

PYRUS AUCUPÁRIA (*Fowlers' Service Tree*).

eaten by birds, and often used as a lure by the bird-catcher or fowler, *auceps*. For a further account of this tree, as well as the rest of the genus, see "Forest Trees of Britain," vol. i.—Fl. May. Tree.

5. *P. Ária* (White Beam Tree).—*Leaves* egg-shaped, deeply and irregularly serrated, white below; *flowers* in corymbs; *fruit* nearly round.—Woods. A small tree, well distinguished by its very large leaves, which are



PYRUS ÁRIA (*White Beam-Tree*).

remarkably white and silky beneath, especially when beginning to expand. Nowhere is this tree more ornamental than on the ruinous walls of the ancient Roman town of Silchester, where it abounds.—Fl. June. Tree.

17. Méspilus (*Medlar*).

1. *M. Germánica* (Common Medlar).—A tree well known in a cultivated state, but nowhere, perhaps, in Great Britain truly wild. The *flowers* are white and very large, and the *fruit* is remarkably flattened at the top, exposing the upper ends of the long seed-cells.—Fl. May. Tree.

18. Cratægus (*Hawthorn*).

1. *C. Oxyacantha* (Hawthorn, White-thorn, or May-bush).—A tree which, though it varies considerably in

MÉSPILUS GERMÁNICA (*Common Medlar*).

its mode of growth, shape of its leaves, and colour of its flowers and fruit, is so well known as to need no description. The name Hawthorn is supposed to be a corruption of the Dutch *hag* or *hedge* thorn; although, therefore, the fruit is generally called a *haw*, that name is derived from the tree which produces it, and the tree

CRATÆGUS OXYACANTHA (*Hawthorn*).

does not, as is frequently supposed, take its name from the fruit which it bears.—Fl. May, and, in the mountains, till late in June. Tree.

ORD. XXVII.—ONAGRACEÆ.—THE WILLOW-HERB TRIBE.

Calyx of 4, sometimes 2 lobes, which in the bud are attached to each other by their edges; *calyx-tube* more or less united to the ovary; *petals* as many as the lobes of the calyx, twisted while in bud; *stamens* 4 or 8, rarely 2, springing from the mouth of the calyx; *ovary* of 2 or 4 cells, often crowned by a disk; *stigma* knobbed, or 4-lobed; *fruit* a berry, or 4-celled capsule. —Herbaceous plants or shrubs, principally inhabiting the temperate parts of the globe, especially America and Europe. In this Order we find the elegant American genus *Fuchsia*, with its coloured 4-cleft calyx, and often edible fruit. Many species of *Œnothéra* are commonly cultivated as garden plants, some bearing flowers 3 or 4 inches in diameter; those with yellow or white flowers which open only in the evening, are called Evening Primroses. The properties of the plants which compose this Order are unimportant. The wood of the *Fuchsia* is said to be used as a dye, and the roots of *Œnothéra biennis*, the common Evening Primrose, are eatable. In all, the number 4 predominates.

1. EPILÓBIUM (Willow-Herb).—*Calyx* 4-parted, the lobes not combined after expansion; *petals* 4; *stamens* 8; *capsule* long, 4-sided, 4-celled, 4-valved; *seeds* numerous, tufted with down. (Name from the Greek *epi*, upon, and *lobos*, a pod, the flowers being placed on the top of a pod-like seed-vessel.)

2. ŒNOTHÉRA (Evening Primrose).—*Calyx* 4-parted, the lobes more or less combined after expansion, and bent back; *stamens* 8; *capsule* 4-celled, 4-valved; *seeds* numerous, not bearded. (Name in Greek signifying "catching the flavour of wine.")

3. ISNARDIA.—*Calyx* 4-parted; *petals* 4, or none; *stamens* 4; *capsule* inversely egg-shaped, 4-angled, 4-celled, 4-valved, crowned with the calyx. (Named after a French botanist of the 18th century, Antoine d'Isnard.)

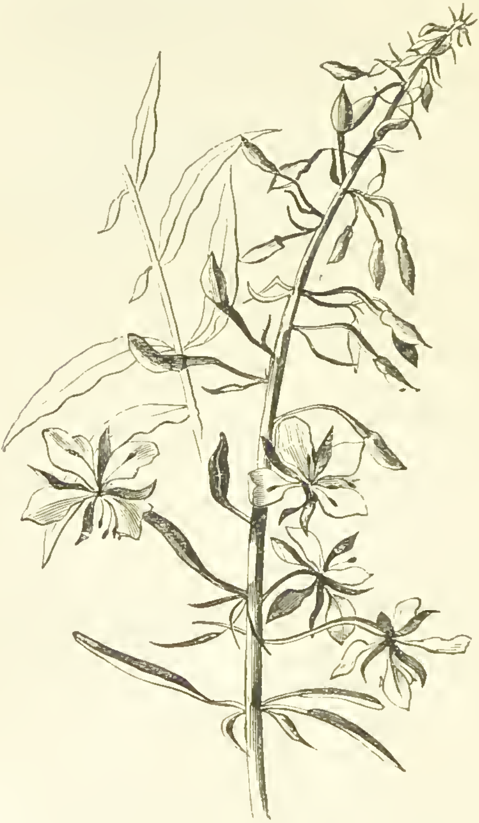
4. CIRCÆA (Enchanter's Nightshade).—*Calyx* 2-parted; *petals* 2; *stamens* 2; *capsule* 2-celled, each cell containing a seed. (Name from Circe, the enchantress so celebrated in Greek Mythology.)

1. EPILÓBIUM (*Willow-Herb*).

* *Petals unequal in size; stamens bent down.*

1. *E. angustifolium* (Rose Bay, or Flowering Willow). —*Leaves* narrow, pointed, smooth.—Damp woods; rare. A tall and handsome species not often met with in a wild state, but very common in gardens, where it is cul-

tivated for the sake of its large, rose-coloured flowers. Caution should be used in admitting it into a small garden, as its roots creep extensively, and are very difficult to eradicate.—Fl. July. Perennial.



EPILOBIUM ANGUSTIFOLIUM (*Rose Bay, or Flowering Willow*).

** *Petals all equal ; stamens erect ; stigma 4-cleft.*

2. *E. hirsútum* (Great Hairy Willow-Herb).—Woolly : *leaves* clasping the stem, narrow-oblong, serrated ; *stem*

much branched ; *root* creeping.—Wet places ; common. A handsome species, 4—6 feet high, with large rose-coloured flowers. Well marked by its very downy stems and leaves, and creeping roots.—Fl. July, August. Perennial.

3. *E. parviflórum* (Small-flowered, Hairy Willow-Herb).—Downy ; *leaves* sessile, narrow, toothed ; *stem* nearly simple ; *root* fibrous.—Wet places ; common. Distinguished from the last by its smaller size, unbranched mode of growth, and fibrous roots.—Fl. July, August. Perennial.

4. *E. montánum* (Broad, Smooth-leaved Willow-Herb).—*Leaves* egg-shaped, acute, smooth, toothed, the lower ones shortly stalked ; *stem* round, slightly downy.—Dry banks, and hilly places ; frequent. A small species, about a foot high, with rose-coloured flowers, which are most frequently found in a half-open state. It may often be detected when in seed by its capsules, the valves of which open lengthwise, and disclose the numerous *seeds* bearded with cottony down.—Fl. July, August. Perennial.

*** *Petals all equal ; stamens erect : stigma knobbed, not 4-cleft.*

5. *E. tetragónum* (Square-stalked Willow-Herb).—*Leaves* narrow, sessile, toothed ; *stem* 4-angled, nearly smooth.—Wet places ; common. From 1 to 2 feet high, and often, like the last and following species, more conspicuous when in seed than in flower.—Fl. July, August. Perennial.

6. *E. palustré* (Narrow-leaved Marsh Willow-Herb).—*Leaves* narrow, wedge-shaped at the base, slightly toothed, sessile ; *stem* round, nearly smooth.—Wet places ; frequent. From 6 to 18 inches high, with very narrow, nearly entire leaves, small flowers, which droop while in bud, and a round stem, which often has 2 downy lines on opposite sides.—Fl. July, August. Perennial.

* To this group, with undivided stigmas, belong also

E. róseum (Pale Smooth-leaved Willow-Herb), growing in wet places about London, with stalked, egg-shaped *leaves,* and an imperfectly 4-angled *stem; E. alsínifolium* (Chickweed-leaved Willow-Herb), a mountainous species, from 6 to 12 inches long, with very thin egg-shaped, pointed *leaves,* and a few rather large *flowers;* and *E. alpínum* (Alpine Willow-Herb), also a mountain species, 3 to 4 inches high, which is distinguished from the last by its obtuse *leaves,* and 1 or 2 *flowers,* which droop while in bud.

2. ŒNOTHÉRA (*Evening Primrose*).

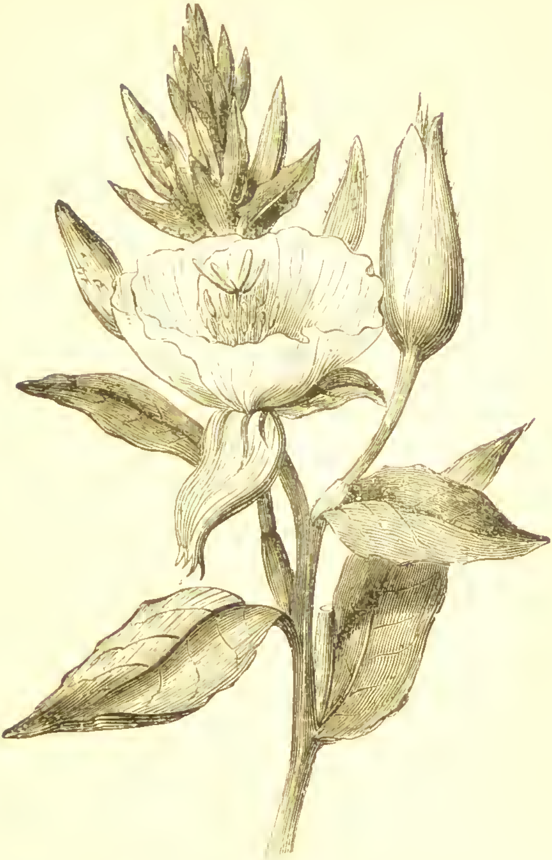
1. *Œ. biennis* (Common Evening Primrose).—A tall and stout herbaceous plant, with long, light-green, smooth *leaves,* and large, pale yellow, fragrant *flowers,* which open in the evening, and wither towards the middle of the next day. It is common in gardens, and in a few places appears to be naturalized.—Fl. July—September. Biennial.

3. ISNÁRDIA.

1. *I. palustris* (Marsh Isnardia).—The only British species.—A small herbaceous plant, 6—8 inches long, with prostrate rooting *stems,* and axillary sessile *flowers,* which are destitute of *petals.*—Very rare; in a pool, at Buxstead, Sussex, and on Petersfield Heath, Hampshire. —Fl. July. Annual.

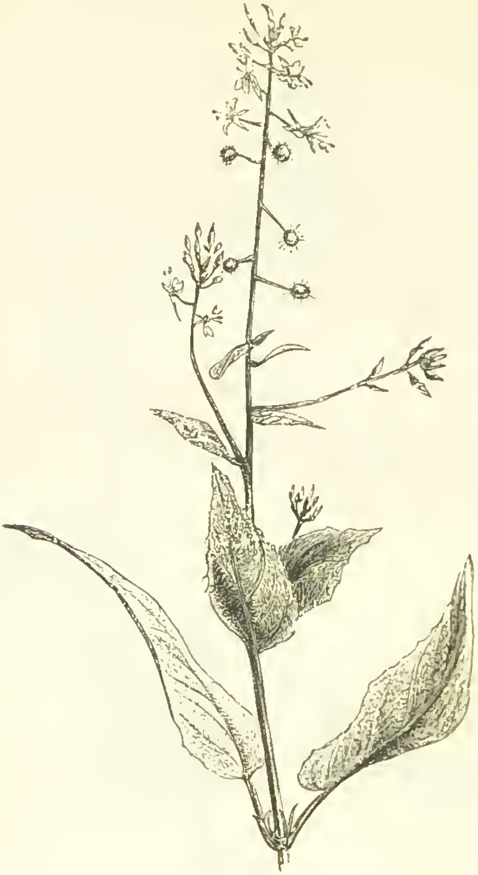
4. CIRCÆA (*Enchanter's Nightshade*).

1. *C. Lutetiána* (Common Enchanter's Nightshade) —*Stem* downy, branched; *leaves* egg-shaped, tapering to a point, toothed; *calyx* hairy.—Damp shady places: common. A slender herbaceous plant, 1—2 feet high, with creeping roots, spreading foliage, and terminal clusters of minute white flowers, with pink stamens,



ŒNOTHÉRA BIENNIS (*Common Evening Primrose*).

which are succeeded by 2-lobed hairy seed-vessels ; often a troublesome weed in damp gardens.—Fl. July, August. Perennial.



CIRCÆA LUTETIANA (*Common Enchanter's Nightshade*)

2. *C. alpina* (Alpine Enchanter's Nightshade).—*Stem* nearly smooth; *leaves* heart-shaped, toothed, shining; *calyx* smooth.—Mountainous woods. Closely resembling the last, but smaller, and less branched. The leaves are remarkable for their delicate texture, and, when dried, are nearly transparent.—Fl. July, August. Perennial.

ORD. XXVIII.—HALORAGACEÆ.—THE MARE'S-TAIL TRIBE.

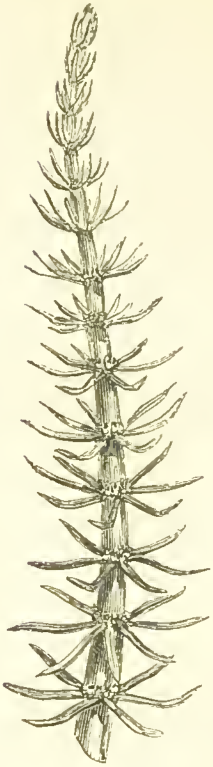
Calyx adhering to the ovary, and either expanding into 3 or 4 minute lobes, or reduced to a mere rim; *petals* either minute and placed on the mouth of the calyx, or wanting; *stamens* either equalling the petals in number, twice as many, or, when petals are absent, 1 or 2; *ovary* with one or more cells; *stigmas* equal in number to the cells of the ovary; *capsule* not opening; *seeds* solitary, pendulous.—An unimportant Order, comprising about 70 species of plants, which are for the most part herbaceous aquatics, with inconspicuous flowers often destitute of petals, and in one genus, *Hippuris* (Mare's-tail), composed of a minute *calyx*, a solitary *stamen*, and a single *seed*. In several species the *stamens* and *pistils* are in separate flowers.

1. HIPPÚRIS (Mare's-tail).—*Calyx* forming a minute, indistinctly 2-lobed rim to the ovary; *petals* 0; *stamen* 1; *style* 1; *seed* 1, nut-like. (Name in Greek signifying *mare's tail.*)

2. MYRIOPHÝLLUM (Water Milfoil).—*Stamens* and *pistils* in separate flowers, but on the same plant (monœcious); *calyx* 4-parted; *petals* 4; *stamens* 8; *styles* 4; *fruit* of 4 nut-like seeds. (Name from the Greek *myrioi*, 10,000, and *phyllon*, a leaf, from its numerous leaves.)

1. HIPPÚRIS (*Mare's-tail*).

1. *H. vulgáris* (Common Mare's-tail).—The only British species, not uncommon in stagnant water. A singular plant, with erect, jointed *stems*, which are unbranched, except at the base, and taper to a point, bearing whorls of very narrow *leaves* with hard tips. The inconspicuous *flowers* are sessile in the axils of the upper leaves, and are often without stamens.—Not to be



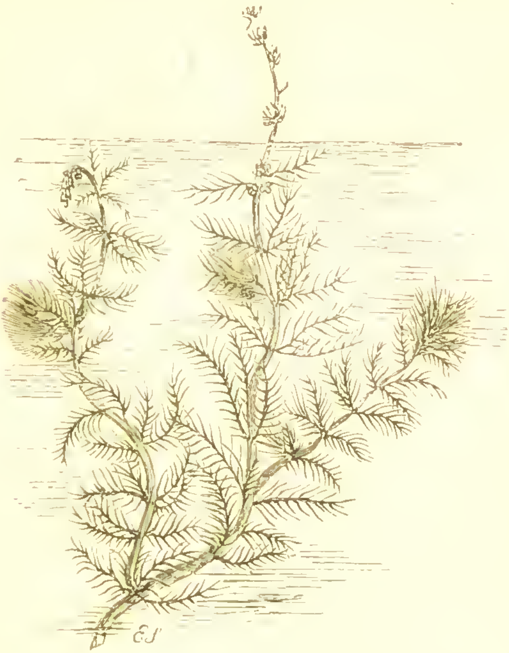
HIPPÚRIS VULGÁRIS (*Common Mare's tail*).

confounded with the genus *Equisétum* (Horse-tail), a plant allied to the Ferns, which also has a jointed stem and rigid leaves, but bears its fructification in terminal spikes, or heads.—Fl. June, July. Perennial.

2. MYRIOPHÝLLUM (*Water Milfoil*).

1. *M. spicátum* (Spiked Water Milfoil).—*Flowers* in whorls, forming a slender leafless spike.—Stagnant

water; frequent. An aquatic plant, forming a tangled mass of slender, much branched stems; *leaves* 4 in a whorl, finely divided into numerous hair-like segments, the whole plant being submerged, except the spikes of inconspicuous greenish flowers, which rise a few inches above the surface.—Fl. July, August. Perennial.



MYRIOPHÝLLUM SPICÀTUM (*Spiked Water Milfoil*).

* *M. verticillatum* (Whorled Water Milfoil) differs from the preceding in having the *flowers* in whorls at the base of the leaves; *M. alterniflorum* (Alternate-flowered Water Milfoil) has the *barren flowers* alternately arranged in a short leafless spike, with the *fertile flowers* about 3 together, in the axils of the leaves, at its base. The last two are rare.

ORDER XXIX.—CERÁTOPHYLLACEÆ.—THE HORN-WORT TRIBE.

Stamens and *pistils* in separate flowers, but on the same plant (monœcious); *calyx* many-parted; *corolla* none; *stamens* 12—20, without filaments; *anthers* 2-pointed; *ovary* 1-celled; *style* curved; *seed-vessel* nut-like, 1-seeded, not opening.—This Order contains only

CERÁTOPHYLLUM DEMÉRSUM (*Common Horn-wort*).

Ceratophyllum (Horn-wort), an unimportant family of aquatic plants, very distinct in structure from any other known plants, with rigid whorled *leaves*, which are repeatedly forked, and inconspicuous *flowers*. (Name in Greek signifying *horn-leaved.*)

1. Ceratophýllum (*Horn-wort*).

1. *C. demérsum* (Common Horn-wort).—*Fruit* armed with 2 thorns near the base, and terminated by the curved *style*.—Slow streams and ditches; frequent. An aquatic plant, growing entirely under water; with long, slender *stems*; whorled, bristle-like *leaves*, which are 2—4 times forked, and often inflated and jointed; the *flowers* also are whorled, and grow in the axils of the leaves.—Fl. July. Perennial.

* *C. submérsum* scarcely differs from the preceding, except in having fruit without thorns.

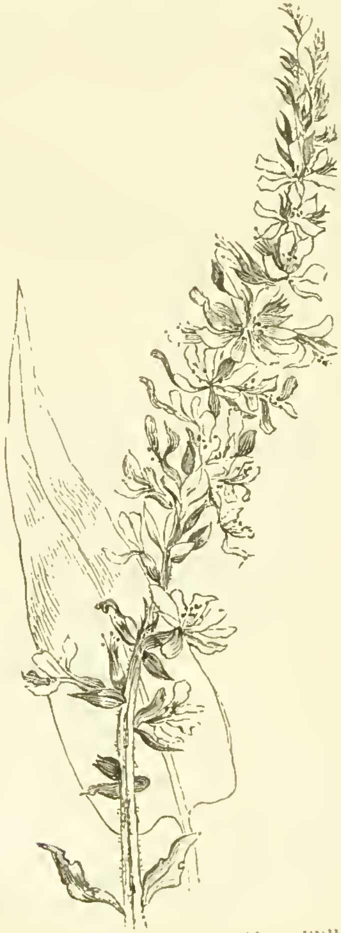
Ord. XXX.—LYTHRACEÆ.—Loosestrife Tribe.

Calyx tubular, many-parted, often with intermediate teeth; *petals* inserted between the outer divisions of the calyx, soon falling off; *stamens* springing from the tube of the calyx, within the petals, and either equalling them in number, or twice, thrice, or four times as many; *ovary* 2—4 celled; *style* single; *capsule* many-seeded, covered by the calyx, but not united to it.—Herbaceous plants, mostly with opposite leaves, and 4-cornered stems, inhabiting Europe, America, and India. Many of the plants of this tribe possess astringent properties, and some are used for dyeing. The common Purple Loosestrife is found in Australia. *Lawsonia inermis* is the plant from which the Henna of Egypt is obtained. It is used by the women of that country to stain their nails of an orange colour, and is also employed for dyeing Morocco leather reddish-yellow.

1. Lythrum (Purple Loosestrife).—*Calyx* cylindrical, with 12 divisions, alternately smaller; *petals* 6; *stamens*

6 or 12; *style* thread-like. (Name from the Greek *lythron*, blood, from the colour of the flowers.)

2. PEPLIS (Water Purslane).—*Calyx* bell-shaped with 12 divisions, alternately smaller; *petals* 6, minute, soon falling off; *stamens* 6; *style* very short. (Name of Greek origin, and anciently applied to another plant.)

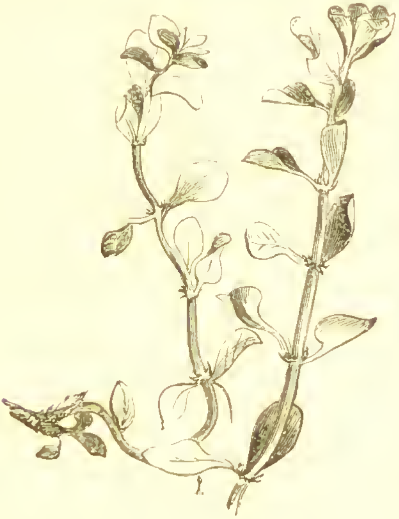


LYTHRUM SALICARIA (*Purple Loosestrife, or Willowstrife*).

1. Lýthrum (*Purple Loosestrife*).

1. *L. Salicária* (Purple Loosestrife, or Willowstrife).—*Leaves* opposite, long, and narrow, heart-shaped at the base ; *flowers* whorled, in leafy spikes ; *stamens* 12.—Watery places ; abundant. An exceedingly handsome plant, 2—4 feet high, generally growing on river banks, among sedges and rushes, and sending up tall, tapering spikes of purple flower, which seen from a distance might be mistaken for Foxgloves.—Fl. July, August. Perennial.

* *L. hyssopifolia* (Hyssop-leaved Purple Loosestrife) is a much smaller plant, 4—6 inches high, with alternate *leaves*, and solitary purple *flowers*, with 6 *stamens*. It grows in moist places, but is far from common.



PEPLIS PÓRTULA (*Water Purslane*).

2. Peplis (*Water Purslane*).

1. *P. Pórtula* (Water Purslane).—A humble, creeping, aquatic plant, with opposite smooth *leaves*, and

inconspicuous axillary *flowers.* The *stems* are usually more or less tinged with red; and when the plant grows in places from which the water has been dried up, the leaves acquire the same hue.—Fl. July, August. Annual.

ORD. XXXI.—TAMARICACEÆ.—THE TAMARISK TRIBE.

Calyx 4—5 parted, overlapping when in bud, remaining after the petals have withered; *petals* 4—5, from the base of the calyx; *stamens* either equal to the petals in number, or twice as many, distinct, or united by their filaments; *ovary* not combined with the calyx; *styles* 3; *capsule* 3-valved, 1-celled, containing many seeds, which are tufted with down at the extremity.—Mostly shrubs, with rod-like branches and minute leaves, which resemble scales. They are found only in the eastern half of the northern hemisphere, and are most numerous on the shores of the Mediterranean; but though preferring the sea-side, they are not unfrequently found on the banks of rivers, and occur, also, in the desert, especially where the soil is impregnated with salt, as in the neighbourhood of Mount Sinai, where a species of Tamarisk very like the common one, produces a sugary substance, called by the Arabs *Manna.* The bark is astringent, and several species are remarkable for the large quantity of sulphate of soda contained in their ashes, and for the galls which they bear on their branches. These are highly astringent, and are used both in medicine and in dyeing. For a further account of the Manna produced by the Tamarisk of Mount Sinai, see "Forest Trees of Britain."

1. TÁMARIX (Tamarisk).—*Calyx* 5-parted; *petals* 5; *stamens* 5 or 10; *stigmas* feathery. (Named from the *Tamarisci*, a people who inhabited the banks of the Tamaris, now Tambra, in Spain, where the Tamarisk abounds.)

TÁMARIX GÁLLICA (*Common Tamarisk*).

TÁMARIX (*Tamarisk*).

1. *T. Gállica* (Common Tamarisk).—A handsome shrub or small tree, with long flexible *branches*, and minute scale-like *leaves*, which are close pressed to the twigs, and give the tree a light feathery appearance. The *flowers*, which are rose-coloured, grow in clusters of

spikes. This can scarcely be considered a native of Britain, occurring only in a few places on the south-western coast, and everywhere appearing to have been planted. See "Forest Trees of Britain."—Fl. July. Shrub.

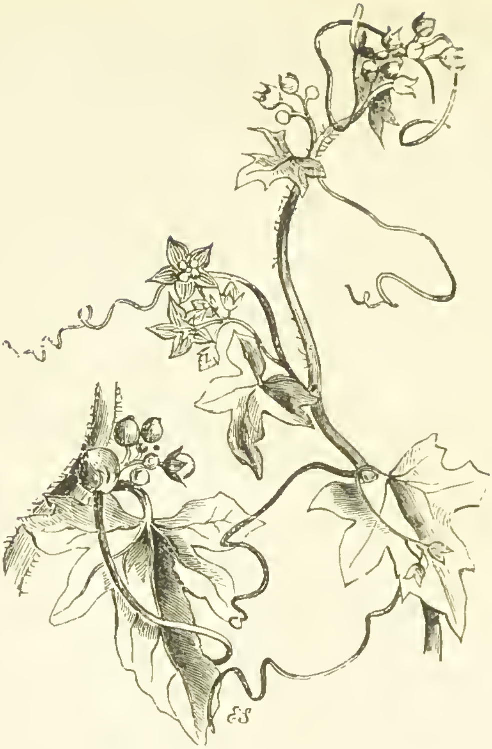
ORD. XXXII.—CUCURBITACEÆ.—THE GOURD TRIBE.

Stamens and *pistils* in separate flowers, either on the same plant (Monœcious) or on different plants (Diœcious); *calyx* 5-toothed, united with the corolla; *corolla* often scarcely to be distinguished from the calyx; *stamens* 5, more or less united; *anthers* twisted; *ovary* imperfectly 3-celled; *style* short; *stigmas* short, thick, lobed, velvety; *fruit* more or less juicy; *seeds* flat, wrapped in a skin.—A large and important Order, containing herbaceous plants with juicy stems, and climbing by means of tendrils, which arise from the base of the leaf-stalks. The leaves are usually lobed and rough; the flowers often large, white, red, or yellow; the fruit juicy, or fleshy. They inhabit principally the hot regions of the globe, but a few are found in temperate climates; and a great number are cultivated in Europe, either for ornament or use. Their properties are in many instances exceedingly violent, of which the common drug *Colocynth* affords an example; the Bottle Gourd is another, it being recorded that some sailors were poisoned by drinking beer that had been standing in a flask made of one of these gourds. The poisonous plant mentioned in 2 Kings iv. 39, 40, is supposed to be a plant of this tribe, the *Wild*, or *Ass Cucumber*, which bears an oval fruit of a very bitter taste, and grows in sandy and desert places. As this cucumber has very much the same appearance as that which is cultivated in gardens, but only is somewhat smaller, and as even its leaves and tendrils are similar, it might easily happen that the man sent out by the disciples of the prophets took wild Cucumbers for a harmless fruit, and prepared a meal of them. But the bitter taste of the boiled Cucumber made those who tasted it fear that it was poisonous, the opinion being general with the Hebrews that a bitter taste indicated the presence of poison (see Rev. viii. 10, 11). The only plant belonging to this tribe which is a native of Britain, *Bryónia dioíca* (White Bryony), partakes of the properties of Colocynth, and the root is said to be a valuable medicine. The Spirting Cucumber, so called from the force with which it expels the poisonous juice when ripe, is a very dangerous drug, a few grains of Elaterium, a prepared form of this juice, having been known to bring on symptoms of poisoning. A case even is recorded, when a person was taken dangerously ill from having merely carried a specimen in his hat. Many species, however, produce edible fruit; for instance, the numerous varieties of Melon and Cucumber, the Water Melon, so highly esteemed for the cool refreshing juice of its ripe fruit, and one of our finest table vegetables, the Vegetable Marrow. It is said that the tender shoots of the White Bryony may be used with safety after having been boiled, and that they resemble Asparagus in flavour; but it is highly probable that the shoots of Black Bryony (*Tamus communis*), a plant belonging to a different Order, may have been used instead; in either case the experiment is a dangerous one.

1. Bryónia (Bryony).—*Stamens* 5, in 3 sets; *style* 3-cleft; *fruit* a globose berry. (Name from the Greek *bryo*, to bud, the rapid growth of the Gourd tribe being proverbial.)

1. Bryónia (*Bryony*).

1. *B. dioíca* (White Bryony).—The only British species; frequent in England, except in the extreme western counties. An elegant climbing plant, with large, light green, rough *leaves*, having undivided tendrils at the base, and bunches of whitish *flowers*, with green veins. The *fertile flowers* may be distinguished at once from



BRYÓNIA DIOÍCA (*White Bryony*).

the *barren*, by the presence of an *ovary* below the calyx. These are succeeded by globular scarlet *berries*, which hang about the bushes after the stems and leaves have withered. The berries of Black Bryony (*Tamus commúnis*) are larger, and elliptical in shape; both should be avoided as injurious, if not poisonous.—Fl. May—August. Perennial.

ORD. XXXIII.—PORTULÁCEÆ.—THE PURSLANE TRIBE.

Calyx of 2 sepals, united at the base; *petals* usually 5, from the base of the calyx; *stamens* 3 or more, inserted with the petals; *ovary* 1-celled; *style* 1 or 0; *stigmas* several; *capsule* 1-celled, opening transversely, or by 3 valves; *seeds* usually more than 1.—Herbs or shrubs, with juicy stems and leaves, and irregular flowers, which open only during sunshine. The most remarkable plant in this Order is the common Purslane, which has been used from all antiquity as a pot-herb. Many species have large, showy flowers, but the only one which occurs in Britain is a humble plant, with very inconspicuous flowers.

1. Montia (Water Blinks).—*Calyx* of 2 sepals; *corolla* of 5 petals, 3 smaller than the others, and all united at the base; *tube of the corolla* split to the base; *capsule* 3-valved, 3-seeded.

MONTIA FONTANA (*Water Blinks*).

1. Móntia (*Water Blinks*).

1. *M. fontána* (Water Blinks).—The only species; abundant in wet places. An unpretending little plant, well marked by its 2-leaved *calyx*, irregular *corolla*, the tube of which is split in front, and by its *capsules* containing 3 dotted *seeds*.—Fl. June—August. Annual.

ORD. XXXIV.—PARONYCHIACEÆ.—THE KNOT-GRASS TRIBE.

Sepals usually 5 ; *petals* 5, minute, inserted between the lobes of the calyx, sometimes wanting ; *stamens* varying in number, opposite the petals, if equalling them in number ; *ovary* not combined with the calyx ; *pistils* 2—5 ; *fruit* 1-celled, opening with 3 valves, or not at all.—Small, branching, herbaceous, or somewhat shrubby plants, with sessile undivided leaves and minute flowers, principally confined to the south of Europe and north of Africa, where they grow in the most barren places, covering with a thick vegetation soil which is incapable of bearing anything else. A few only are found so far north as Great Britain, and nearly all of these are confined to the southern shores.

* *Fruit 1-seeded, enclosed in the calyx.*

1. CORRIGÍOLA (Strapwort).—*Sepals* 5 ; *petals* 5, as long as the calyx ; *stamens* 5 ; *stigmas* 3, sessile. (Name from *corrigia*, a strap, from the shape of the leaves.)

2. HERNIARIA (Rupture-wort).—*Sepals* 5 ; *petals* 5, resembling barren filaments ; *stamens* 5, inserted on a fleshy ring ; *stigmas* 2, nearly sessile. (Name from the disease for which the plant was formerly supposed to be a remedy.)

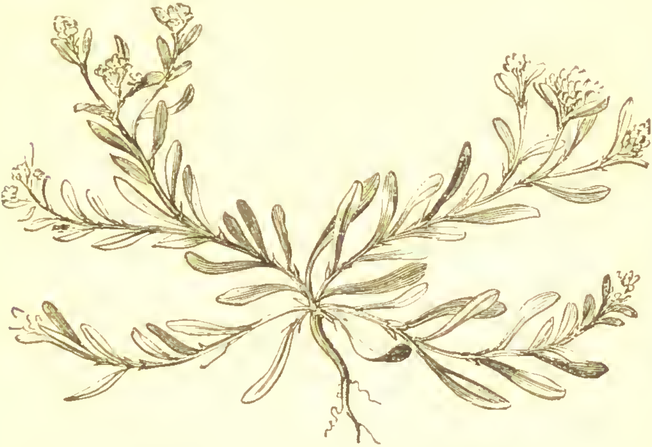
3. ILLÉCEBRUM (Knot-grass).—*Sepals* 5, coloured, thickened, ending in an awl-shaped point ; *petals* 0, or 5 ; *stigmas* 2. (Name from the Latin *illécebra*, an attraction.)

** *Fruit, a many-seeded capsule.*

4. POLYCARPON (All-seed).—*Sepals* keeled at the back ; *petals* 5, small, notched ; *stamens* 3—5 ; *stigmas* 3, nearly sessile ; *fruit* 1-celled, 3-valved. (Name from the Greek *polys*, many, and *carpos*, fruit.)

5. SPERGULARIA (Sandwort Spurrey).—*Sepals* flat ; *petals* ovate, entire, as large as the calyx ; *styles* usually 3. (Name from the resemblance to the next genus.)

6. SPERGULA (Spurrey).—*Petals* ovate, entire, as large as the calyx; *styles* 5, alternate with the sepals. (Name from the Latin *spargo*, to scatter, the genus being widely diffused.)



CORRIGÍOLA LITTORÁLIS (*Sand Strapwort*).

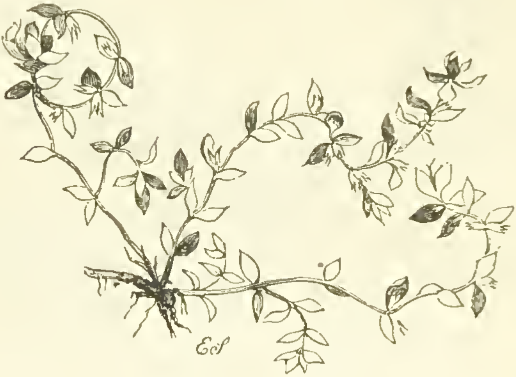
1. CORRIGÍOLA (*Strapwort*).

1. *C. littorális* (Sand Strapwort).—A small but pretty plant, with slender spreading *stems*, which lie quite prostrate, very narrow strap-shaped *leaves*, of a glaucous hue, and tufts of small white *flowers*.—It grows in two or three places on the sea-shore of Devon, and is very abundant on the banks of the Loe Pool, near Helston, Cornwall.—Fl. August—October. Annual.

2. HERNIARIA (*Rupture-wort*).

1. *H. glabra* (Smooth Rupture-wort).—A small prostrate plant, with much of the habit of Wild Thyme; abundant in the neighbourhood of the Lizard Point, Cornwall, but very rare elsewhere. Though called *smooth*, the leaves are always more or less hairy, and sometimes

strongly fringed at the edges. The flowers are green, and grow in sessile tufts in the axils of the leaves, or, not unfrequently, crowded into leafy spikes. Some botanists consider the more hairy variety a distinct species, but without sufficient reason; as the plant assumes various forms, according to soil, and to its being more or less exposed.—Fl. July—September. Perennial.



ILLÉCEBRUM VERTICILLATUM (*Whorled Knot-grass*).

3. ILLÉCEBRUM (*Knot-grass*).

1. *I. verticillatum* (Whorled Knot-grass).—In boggy ground, and standing water, among other aquatic plants; in Cornwall, not uncommon; much rarer in Devonshire. A pretty plant, with slender tangled *stems*, of a red tint, glaucous, sessile *leaves*, and axillary whorls of white *flowers*, which are remarkable for their thickened calyx-leaves terminating in a soft point.—Fl. July—September. Perennial.

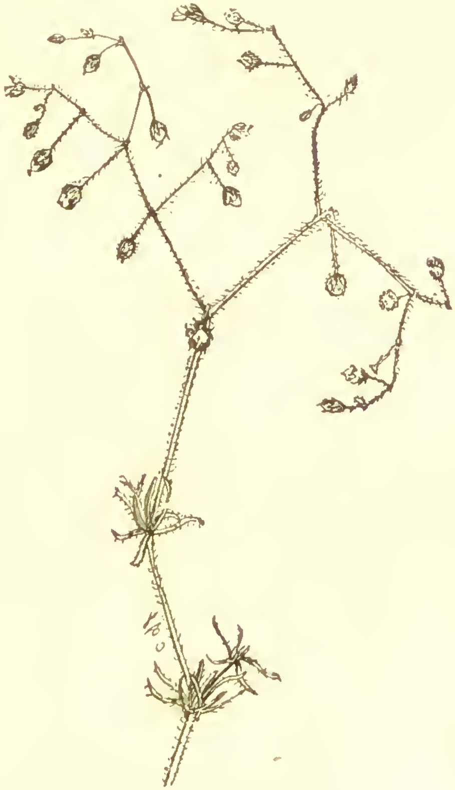
4. POLYCARPON (*All-seed*).

1. *P. tetraphyllum* (Four-leaved All-seed).—On the southern coast, but far from common. A small plant, with prostrate, branched *stems*, and many minute greenish-

white *flowers,* with 3 stamens. The lower *leaves* grow in fours, the upper in pairs.—Fl. May—August. Annual.

5. SPERGULARIA (*Sandwort Spurrey*).

1. *S. rubra* (Field Sandwort Spurrey).—*Leaves* linear, somewhat fleshy, pointed with a minute bristle ; *stipules* chaffy ; *stems* prostrate ; *seeds* rough.—A small branching annual, with purple flowers, common in sandy fields.—Fl. June—August. Annual.



SPÉRGULA ARVÉNSIS (*Corn Spurrey*).

2. *S. marina* (Seaside Sandwort Spurrey).—*Leaves* semi-cylindrical without points ; *stipules* chaffy ; *stems* prostrate ; *seeds* smooth, flattened, bordered.—On the sea-shore ; common. Stouter and larger than the last, but nevertheless so nearly resembling it, that it is doubtful whether both may not belong to the same species, varied, however, by soil and situation.—Fl. June—August. Annual.

6. SPÉRGULA (*Spurrey*).

1. *S. arvensis* (Corn Spurrey). —*Leaves* cylindrical, in whorls, with minute chaffy stipules at the base ; *flowers* panicled, bent down when in fruit.—A common weed in gravelly corn-fields, 6—12 inches high, flowers white.—"Cattle are fond of this plant, and it is an object of culture in Holland." *Sir W. J. Hooker.*—Fl. all the summer. Annual.

ORD. XXXV.—CRASSULACEÆ.—THE STONECROP TRIBE.

Sepals 3—20, more or less united at the base ; *petals* equal to the sepals in number, inserted in the bottom of the calyx ; *stamens* the same, or twice as many, in which latter case, those opposite the petals are shorter than the others ; *ovaries* as many as petals, 1-celled, tapering into stigmas, often with a gland at the base of each ; *fruit* consisting of several erect seed-vessels, which open lengthwise ; *seeds* in a double row.—Herbs or shrubs, remarkable for their thick, fleshy leaves, and starlike flowers, inhabiting most parts of the world, especially the south of Africa, and growing in the driest situations, where not a blade of grass nor a particle of moss can live ; on naked rocks, old walls, or sandy, hot plains,—alternately exposed to the heaviest dews of night, and the fiercest rays of the noonday sun,—having the power of laying in during the rainy season a large store of moisture, which they obstinately retain, and requiring no further nourishment, save what they derive from the atmosphere through myriads of mouths invisible to the naked eye, but covering all their surface. A common British species, *Sedum Teléphium*, "Orpine living long," will grow for months, if suspended by a string from the ceiling of a room, without being once supplied with water. An African species, *Bryophyllum calycínum*, will not only grow if similarly treated, but if its leaves be gathered and laid on the ground, they will send out from the notches on their margin, young shoots, in all respects resembling the parent plant. The properties of the tribe are in general acrid; some few contain malic acid, and one or two are sometimes used in medicine, for their astringent properties.

1. TILLEA.—*Sepals*, *petals*, *stamens*, and *carpels*, 3 or 4, the latter 2-seeded. (Named after *Michael Angelo Tilli*, an Italian botanist.)

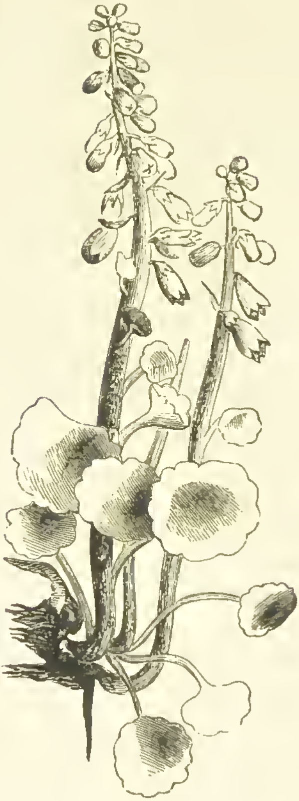
2. COTYLÉDON (Pennywort).—*Sepals* 5; *corolla* tubular, 5-cleft; *carpels* 5, with a scale at the base of each. (Name from the Greek *cótylé*, a cup, from the shape of the leaves.)

3. SEMPERVÍVUM (House-leek).—*Sepals*, *petals*, and *carpels*, 6—10; *stamens* twice as many. (Name from the Latin *semper*, always, and *vivo*, to live.)

4. SEDUM (Stonecrop).—*Sepals* and *petals* 4—6; *stamens* 8—12, spreading; *carpels* 4—5. (Name from the Latin *sedeo*, to sit; from the humble growth of the plants.)

1. TILLÆA.

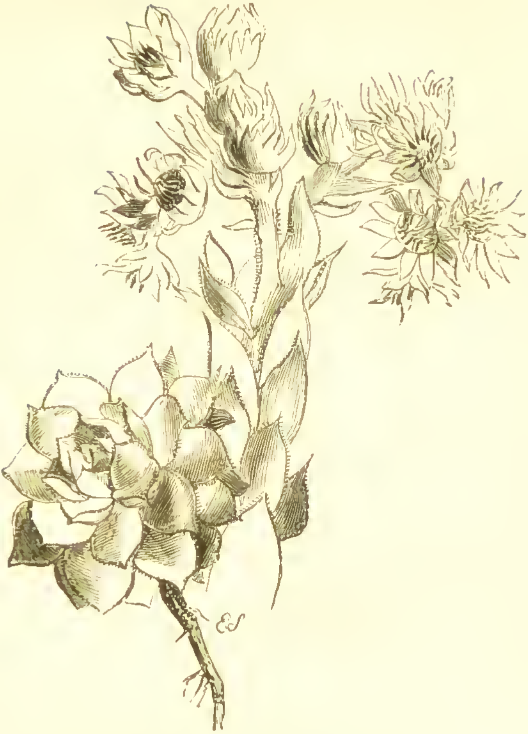
1. *T. muscósa* (Mossy Tillæa).—A minute plant, with small, opposite, blunt *leaves*, and greenish-white *flowers* tipped with red; more frequent as a troublesome weed in gravel walks, than elsewhere. It has somewhat of the habit of a *Sagína*, from which, however, it is very distinct.—Fl. May, June. Annual.



COTYLÉDON UMBILÍCUS (*Wall Pennywort*).

2. COTYLÉDON (*Pennywort*).

1. *C. Umbilícus* (Wall Pennywort).—A remarkably succulent plant, with circular, notched *leaves*, which are more or less sunk above, and are supported on their stalks by their centres, or *peltate*. The *flowers* are pendulous, and grow in spike-like clusters, 6—18 inches high, of a greenish yellow colour. The leaves are well known to children by the name of "penny pies."—Fl. June—August. Perennial.



SEMPERVÍVUM TECTÓRUM (*Common House-leek*).

3. SEMPERVÍVUM (*House-leek*).

1. *S. tectórum* (Common House-leek).—A common but scarcely indigenous plant, growing on the roofs of cottages. The *leaves* are thick and juicy, fringed at the edges, and grow in compact rose-like tufts. Each of the purple *flowers* contains 12 perfect and 12 imperfect *stamens*; the latter, which are arranged alternately with the petals, frequently bearing *anthers* containing embryo *seeds*, like those found in the carpels, but of course

never attaining maturity. The leaves contain malic acid, the same acid which is found in the apple.—Fl. July. Perennial.

4. Sedum (*Stonecrop*).

** Leaves flat; root thick.*

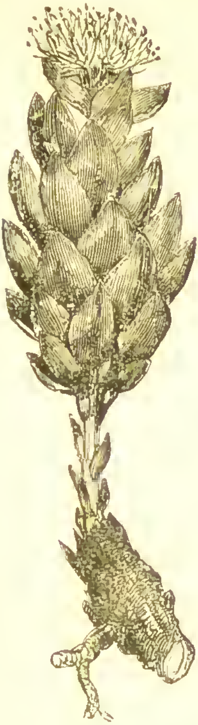
1. *S. Teléphium* (Orpine, or Live-long).—*Leaves* oblong egg-shaped, serrated; *stems* erect.—The largest British species, and well distinguished, not only by its terminal corymbs of purple flowers, but by its large, broad leaves. It grows about 2 feet high, in bushy places, and is remarkable for the length of time that it will continue fresh after being gathered; whence it derives its name, *Live-long.*—Fl. July, August. Perennial.

2. *S. Rhodíola* (Rose-root).—*Stamens* and *pistils* on separate plants.—A succulent, broad-leaved plant, with the habit of the last species, but stouter.—Abundant on mountains in Scotland, Ireland, and the north of England, and found also on sea-cliffs. The *flowers* are greenish yellow, and grow in compact terminal *cymes* on simple *stems*, 6—10 inches high; *roots* thick and knotted, having the perfume of rose-water. This plant is sometimes placed in a separate genus, *Rhodíola.*—Fl. June. Perennial.

*** Leaves scarcely, if at all, flattened; flowers white.*

3. *S. Ánglicum* (English Stonecrop).—*Leaves* egg-shaped, fleshy, spurred at the base beneath. sessile; *cymes* 2-cleft; *petals* very sharp.—Rocky and sandy places, especially near the sea.—A small plant, 3—4 inches high, with stems which at first are prostrate and rooting, afterwards erect; the leaves are mostly alternate, often tinged with red, small, and very thick; the flowers conspicuous from their star-like form, their white petals spotted with red, and bright purple anthers.—Fl. June, July. Annual.

4. *S. album* (White Stonecrop).—*Leaves* oblong, cylindrical, blunt, spreading; *cyme* much branched,

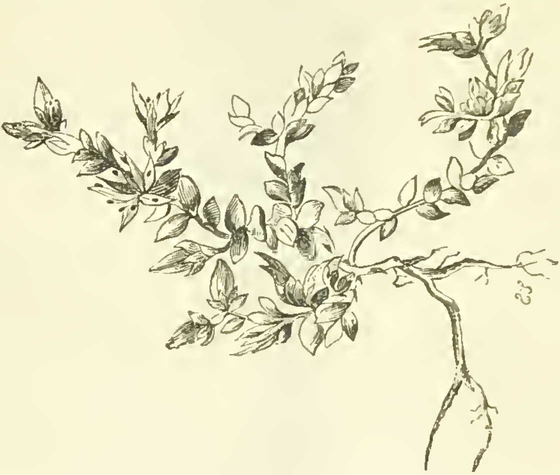


SEDUM RHODÍOLA (*Rose-root*).

drooping when in bud.—Rocks and walls ; not common. Rather taller and more slender than the last, and easily distinguished by its much longer cylindrical leaves, and more numerous white, not spotted, flowers. This species is not uncommon on garden walls, and the roofs of outhouses.—Fl. July, August. Perennial.

* To this group belong *S. villósum* (Hairy Stonecrop), a small species, with hairy, viscid *stems* and *leaves*, and pinkish white *flowers* ; frequent in Scotland and the north of England : and *S. dasyphyllum* (Thick-

leaved Stonecrop), also a small species, but very rare; distinguished from the preceding by its fleshy, almost globular *leaves*, viscid *flower-stalks*, and blunt *petals*.



SEDUM ACRE (*Biting Stonecrop*).

*** *Leaves scarcely, if at all, flattened; flowers yellow.*

5. *S. acré* (Biting Stonecrop).—*Leaves* egg-shaped, fleshy, spurred at the base, sessile; *cymes* 3-cleft.—Walls, rocks, and sandy ground; frequent. Very like *S. Ánglicum* in habit, but with yellow flowers, and growing in similar situations; it may, however, be distinguished, when not in flower, by its thicker and more crowded leaves, which are very acrid, and have gained for the plant the name of *Wall-pepper.*—Fl. June, July. Perennial.

6. *S. reflexum* (Crooked Yellow Stonecrop).—*Leaves* awl-shaped, spurred at the base, nearly cylindrical; the lowermost curved back.—Walls and dry banks; not uncommon. Easily distinguished from any of the preceding by its slender, but tough stems, 6—10 inches high, clothed with spreading, or reflexed leaves, which

are cylindrical and pointed.—Fl. July, August. Perennial.

Other British species, belonging to this group, are *S. sexangulare* (Tasteless Yellow Stonecrop), distinguished from *S. acre* by its *leaves*, which are 6 in a whorl, growing in Greenwich Park, the Isle of Sheppey, and a few other places ; *S. rupestre* (St. Vincent's Rock Stonecrop), a species allied to *S. reflexum*, with slightly flattened *leaves*, which grow 5 in a whorl, found on St. Vincent's Rocks, and other limestone cliffs ; rare : and *S. Forsterianum* (Welsh Stonecrop), another species allied to *S. reflexum*, with *leaves* flattened at the base, and compact *cymes* of flowers, which grows on rocks in Wales and Shropshire.

ORD. XXXVI.—GROSSULARIACEÆ.—THE GOOSEBERRY AND CURRANT TRIBE.

Calyx growing from the summit of the ovary, 4—5 cleft ; *petals* 4—5, small, inserted at the mouth of the calyx-tube, and alternating with the stamens ; *ovary* 1-celled, with the *ovules* (young seeds) arranged in two opposite rows ; *style* 2—4 cleft ; *berry* crowned with the withered flower, pulpy, containing many stalked seeds. —Shrubs with or without thorns, and having alternate lobed leaves, which are plaited when in bud. The flowers grow in clusters in the axils of the leaves, each flower with a bract at its base, and are succeeded by pulpy berries, which in several species are highly prized for their agreeable flavour. In other species the taste is mawkish, or extremely acid. The plants of this tribe grow only in the temperate parts of the world, especially in North America, and on the mountains of Northern India. In Africa they are unknown.

1. RIBES (Currant and Gooseberry).—*Calyx* 5-cleft ; *petals* 5, inserted at the mouth of the calyx-tube ; *stamens* 5 ; *berry* many-seeded, crowned by the withered flower. (Name anciently given to a species of Rhubarb.)

1. Ribes (*Currant and Gooseberry*).

* *Flowers* 1—3 *together ; branches thorny.*

1. *R. Grossularia* (Gooseberry).—The common gooseberry of gardens. Frequently met with in hedges and thickets, but not considered to be a native plant. It is well distinguished by its sharp *thorns,* which grow either singly, or 2—3 together, below the leaf-buds.—Fl. April, May. Shrub.

** *Flowers in clusters ; branches without thorns.*

2. *R. rubrum* (Red Currant).—*Clusters* drooping ; *bracts* very small ; *calyx* smooth ; *leaves* bluntly 5-lobed. —The Red and White Currant of gardens ; not uncommon in hedges near houses ; and in Scotland and the north of England supposed to be wild.—Fl. April, May. Shrub.

RIBES NIGRUM (*Black Currant*).

3. *R. nigrum* (Black Currant).—Clusters loose, drooping, with a single stalked flower at the base of each :

calyx downy; *leaves* sharply 3—5-lobed, dotted with glands beneath.—The Black Currant of gardens; occasionally wild in damp woods. Easily distinguished, at all seasons, by the strong perfume of its buds and leaves.—Fl. April, May. Shrub.

* *R. alpínum* (Tasteless Mountain Currant) has the *stamens* and *pistils* on separate plants; the *flowers* also grow in erect clusters, with very long *bracts* at the base of each. It grows in the mountainous parts of England and Scotland.

ORD. XXXVII.—SAXIFRAGACEÆ.—THE SAXIFRAGE TRIBE.

Sepals 5, rarely 4, more or less united at the base; *petals* equalling the *sepals* in number, inserted between the sepals, rarely 0; *stamens* 5—10; *ovary* of two united carpels; *styles* 2, usually spreading in opposite directions; *capsule* 2-celled, opening on the inside; *seeds* numerous. This Order is principally composed of herbaceous, mountainous plants, with tufted foliage, and glandular stems. They abound in temperate and cold climates, but are not found in tropical countries. The genus *Saxífraga* (Saxifrage) is an extensive one, and contributes greatly to the beauty of the vegetation high up in the mountains; but some species grow on old walls, by the sides of rivulets, and in moist meadows. *Chrysosplenium* (Golden Saxifrage) has no petals. Few of the plants belonging to this tribe are applied to any use. Most of them have slight astringent properties, and some few are bitter and tonic.

1. SAXÍFRAGA (Saxifrage).—*Calyx* in 5 divisions; *petals* 5; *stamens* 10; *styles* 2; *capsule* 2-celled, 2-beaked, opening between the beaks; *seeds* numerous. (Name in Latin signifying *rock-breaker*, many of the species growing in crevices of rocks.)

2. CHRYSOSPLENIUM (Golden Saxifrage).—*Calyx* in 4 divisions; *petals* 0; *stamens* 8, rarely 10; *styles* 2;

capsule 2-beaked. (Name from the Greek, *chrysos*, gold, and *splen*, the spleen, from some imaginary virtues of the plant.)

1. Saxífraga (*Saxifrage*).

** Calyx reflexed, inferior; flowers whitish, panicled.*

1. *S. stelláris* (Starry Saxifrage).—*Leaves* oblong, wedge-shaped, toothed, scarcely stalked; panicle of few flowers.—Wet rocks, and sides of rivulets, in Scotland, Ireland, and the north of England. A mountain plant, 3—5 inches high, with coarsely toothed leaves, and rather large white petals, each with two yellow spots near the base.—Fl. June, July. Perennial.

2. *S. umbrósa* (London Pride, or St. Patrick's Cabbage).—*Leaves* roundish, egg-shaped, with white notches, tapering at the base into a flat stalk.—In the south and west of Ireland, plentiful; naturalized in many parts of England, and very common in gardens. A well-known plant, with rose-like tufts of fleshy leaves, and panicles of small white flowers, dotted with pink. Though growing naturally on mountains, there is scarcely any situation where it will not make itself at home, even in the smoky gardens of London. Hence it varies considerably in form, and has been subdivided by some botanists into several species.—Fl. June. Perennial.

* To this group belong *S. Géum* (Kidney-shaped Saxifrage), distinguished by its kidney-shaped *leaves*: common on mountains in the south of Ireland: and *S. hirsúta*, a species intermediate between *S. Géum* and *S. umbrósa*, also an Irish plant, but very rare.

*** Calyx spreading; leaves not divided.*

3. *S. nivális* (Clustered Alpine Saxifrage).—*Leaves* all from the root, inversely egg-shaped, sharply crenate: *calyx* half inferior; *flowers* in a crowded head.—Mountains in Wales and Scotland. An alpine plant, 3—6

inches high, with rather large, white flowers, which grow in a compact head.

4. *S. aizoídes* (Yellow Mountain Saxifrage).—*Leaves* very narrow, fleshy, fringed; *flowers* in a leafy panicle.—Wet places in the mountains; abundant. A handsome species, about 6 inches high, with large, bright yellow flowers, spotted with scarlet.—Fl. June—September. Perennial.

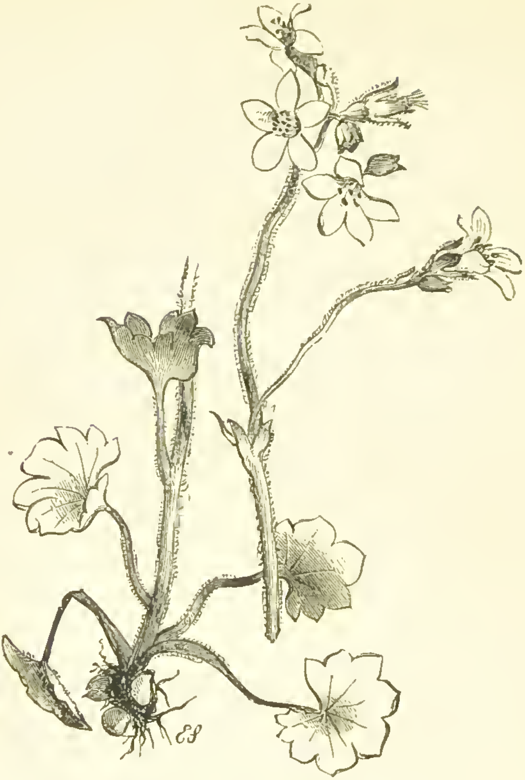
* *S. Hírculus* (Yellow Marsh Saxifrage) differs from the last in having its *flowers* solitary, or nearly so; it is of very rare occurrence: *S. oppositifolia* (Purple Mountain Saxifrage) has egg-shaped *leaves*, and large, solitary, purple *flowers;* it grows on the mountains of Wales, Yorkshire, and Scotland.

*** *Calyx spreading; leaves divided.*

5. *S. granuláta* (White Meadow Saxifrage).—*Root-leaves* kidney-shaped, with rounded lobes, stalked; *stem-leaves* nearly sessile, sharply lobed; *flowers* panicled; *roots* granulated.—Gravelly meadows; not uncommon. A pretty plant, with slender leafy stems, 10—12 inches high, and rather large, pure white flowers. The roots are remarkable for producing numerous, downy, bulb-like tubers. A double variety is frequent in gardens.—Fl. May, June. Perennial.

6. *S. tridactylítes* (Rue-leaved Saxifrage).—Whole plant viscid with glandular hairs; *leaves* wedge-shaped, 3—5-cleft; *stem* much branched; *flowers* terminal, each on a separate stalk.—On the tops of walls, and roofs of cottages; common. A small species, rarely more than 3 inches high, with very hairy and viscid stems, and small white flowers. The whole plant has usually a red tinge.—Fl. May, June. Annual.

7. *S. hypnoídes* (Mossy Saxifrage).—*Root-leaves* 3—5-cleft; those on the creeping shoots 3-cleft, or entire; *lobes* of the leaves all very narrow, acute, bristle-pointed, and fringed.—Mountainous places; common. Distinguished by its dense tufts of finely divided leaves, and

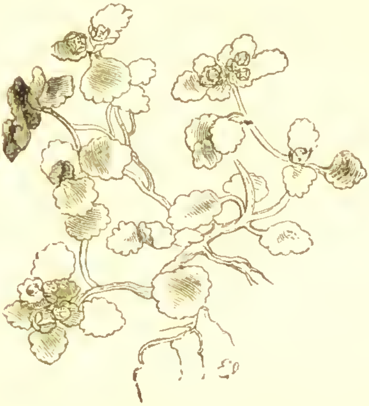


SAXÍFRAGA GRANULATA (*White Meadow Saxifrage*).

loose panicles of rather large, white flowers. Very frequent in gardens.—Fl. May—July. Perennial.

* Closely allied to the preceding is *S. cæspitósa* (Tufted Alpine Saxifrage), distinguished by the obtuse lobes of its *leaves*, and by other minute characters : *S. cernua* (Drooping Bulbous Saxifrage) is a very rare species, which grows only on dry rocks on the summit of some of the Highland Mountains ; it is remarkable for bearing *bulbs* in the axils of the *leaves*, and a soli-

tary terminal white *flower*: *S. rivuláris* (Alpine Brook Saxifrage), another very rare species, grows on moist rocks among the same mountains: besides which, other species and varieties have been described, but an enumeration of them is not thought necessary here.



CHRYSOSPLENIUM OPPOSITIFOLIUM (*Common Golden Saxifrage*).

2. CHRYSOSPLENIUM (*Golden Saxifrage*).

1. *C. oppositifolium* (Common Golden Saxifrage).—*Leaves* opposite, roundish heart-shaped.—Sides of shady rivulets, and wet woods; common. A small aquatic plant, about 6 inches high, with abundance of bright green, tender foliage, and terminal, flat clusters of yellowish green flowers.—Fl. April, May. Perennial.

2. *S. alternifolium* (Alternate-leaved Golden Saxifrage).—*Leaves* alternate, lower ones kidney-shaped, on long stalks.—Very like the last, and growing in similar situations, but rare. The flowers in this species are of a deeper yellow; in both, the number of stamens is usually 8.—Fl. April, May. Perennial.

ORD. XXXVIII.—UMBELLÍFERÆ.—THE UMBELLIFEROUS TRIBE.

Calyx superior, 5-toothed, often reduced to a mere margin; *petals* 5, usually ending in a point, which is bent inwards; *stamens* 5, alternate with the petals, curved inwards when in bud; *ovary* inferior, 2-celled, crowned by a fleshy disk, which bears the petals and stamens; *styles* 2; *stigmas* small; *fruit* composed of 2 carpels, which adhere by their faces to a central stalk, from which as they ripen they separate below, and finally are attached by the upper extremity only; each *carpel* is marked by 5 vertical ridges, with 4 intermediate ones; these ridges are separated by channels, in which are often found, imbedded in the substance of the fruit, narrow cells (called *vittæ*), containing a coloured oily matter; *seeds* 1 in each carpel, attached by their upper extremity, and containing a large horny *albúmen;* the flowers are usually small, and situated on the extremities of little stalks, which are united at the base, and form an *umbel.* When several of these smaller umbels proceed in like manner from a common stalk, the umbel is said to be *compound;* the larger being called a *general umbel*, the smaller *partial.* The small leaves which commonly accompany the flowers of this tribe are called *general*, or *partial bracts*, according to their position; each collection of bracts is sometimes termed an *involucre.*—All the British plants belonging to this order are herbaceous, with tubular, or solid, jointed stems. With two exceptions, *Eryngium* and *Hydrocótylé*, they have compound umbels. By far the larger number have also divided leaves, more or less sheathing at the base, and white flowers. Though it is easy to decide at a glance to what *order* they are to be assigned, no such facility exists in distinguishing the *families* of the Umbelliferæ. Indeed, were it not for the large number of species (1,500), which are known to exist, it is probable that they would have been brought together by botanists, so as to form but a few genera, whereas they have been divided into as many as 267; and, as all these agree in the more important parts of fructification, the distinctions of the genera are necessarily founded on differences so minute, that, in the case of other plants, they would perhaps be considered sufficient to do no more than distinguish species. To the young botanist, therefore, the study of the Umbelliferæ is unusually difficult; all the more important distinctions being founded on the ripe fruit, namely—the number, position, and shape of the *ridges*—the presence or absence of *vittæ*—and the form of the *albúmen*. As it would be absurd, in a work professing to be a popular description of British Wild Flowers, to attend solely, or even in any great degree, to these characters, it has been thought desirable to limit the number of species described to those which are of most common occurrence, and to notice any peculiarity in growth, which, though not strictly admissible into a systematic description, may assist the student in discovering the names of the plants he may meet with. For a fuller list, and for more accurate information, he is referred to works of a professedly scientific character, such as *Hooker's British Flora*, and *Babington's Manual of British Botany.*

Among the large number of species of which this tribe is constituted, one would naturally expect to find plants varying greatly in their properties. And such is the case to a certain extent; the roots, leaves, and seeds are variously employed; some as food and condiments, others, as medicine, while others are highly poisonous. Yet, when considered with reference to their properties, they may be conveniently arranged into 4 groups; all the members of each group being remarkably similar. The first comprises plants which abound in an acrid, watery juice, which is more or less narcotic in its effects on the animal frame, and which, therefore, when properly administered in minute doses, is a valuable medicine. Among these, the most important is

Coníum (Hemlock); every part of this plant, especially the fresh leaves and green fruit, contains a volatile, oily alkali, called *Conía*, which is so poisonous that a few drops soon prove fatal to a small animal. It acts on the nervous system, and is a valuable medicine in cancerous and nervous diseases. Several other British species are poisonous, especially *Œnanthé, Cicúta,* and *Æthúsa*, described below. The second group comprises those which abound in a resinous gum, of a fetid odour, which is supposed to be owing to the presence of sulphur in combination with the peculiar essential oil. Among these, the first place is held by *Asafœtida*, the hardened milky juice of various species of *Férula*, inhabiting Persia and the neighbouring countries. This drug was held in high repute among the ancients for its medical virtues; it was supposed to be an antidote to poison, to restore sight to the blind, and youth to the aged; and was besides considered a certain specific against various diseases. Gum Gálbanum is the produce of other umbelliferous plants, natives of the East. The third group comprises plants the seeds of which abound in a wholesome aromatic oil. The principal of these are well known, under the names of *Caraway*, *Coriander*, *Dill*, *Anise*, and *Cumin*. The fourth group comprises plants which contain some of the above properties in a very slight degree, or so modified as to form wholesome esculent vegetables. Among these, *Carrots* and *Parsneps* occupy the first place; *Celery* and *Alexanders*, in their wild state, are too acrid to be used as food, but, when blanched by artificial means, become mild and agreeable; *Parsley*, *Fennel*, and *Chervil*, the last now nearly out of use, are well-known potherbs; *Samphire* affords the best of pickles; the root of *Eryngo* is sweet, aromatic, and tonic, and is commonly sold in a candied state; the root of *Angelica* (*Angélica Archangélica*) is fragrant and sweet when first tasted, but leaves a glowing heat in the mouth, and is commended by the Laplanders both as food and medicine:

the candied stems form a favourite sweetmeat. Several species produce underground tubers, which, under the name of *pig-nuts*, or *earth-nuts*, are eaten by children and pigs; and others, common in the East, afford valuable pasturage for cattle. Of all the British umbelliferous plants, the most dangerous are the Water Dropworts (*Œnanthé*), the large tuberous roots of which, resembling Dahlia roots, are often exposed by the action of running water, near which they grow, and are thus easily got at by children and cattle.

The following table contains a description of all the common British species: a list of the rarer ones, and of introduced species, will be found at the end of the Order.

* *Umbels simple or irregular.*

1. HYDROCÓTYLÉ (White-rot).—*Flowers* in simple umbels; *fruit* of two flattened, roundish lobes, united by the narrow edge; *leaves* round, peltate. (Name from the Greek, *hydor*, water, and *cótylé*, a platter, from the shape of the leaves, and place of growth.)

2. SANÍCULA (Sanicle).—*Flowers* in panicled tufts, the outer without stamens, the inner without pistils; *fruit* egg-shaped, covered with hooked prickles. (Name from the Latin, *sano*, to heal, the plant being formerly supposed to have remarkable healing qualities.)

3. ERYNGIUM (Eryngo).—*Flowers* in a dense prickly head; *fruit* egg-shaped, covered with chaffy scales.

** *Umbels compound; fruit of two flattened lobes, which are united by the narrow edge, not prickly, nor beaked.*

4. CONÍUM (Hemlock).—*Fruit* egg-shaped, each carpel with 5 wavy ridges; *general bracts* few, *partial* 3, all on the outside. (Name, the Greek for the plant.)

5. SMYRNIUM (Alexanders).—*Fruit* of two kidney-shaped carpels, each having 3 prominent ridges; *bracts* 0. (Name from the Greek, *smyrna*, myrrh, from the scent of some of the species.)

6. CICÚTA (Water Hemlock).—*Fruit* of 2 almost

globose carpels, with 5 broad, flattened ridges; *general bracts* 1 or 2, very narrow, often 0; *partial* several, unequal. (Name from the Latin, *cicúta*, a Hemlock stalk.)

7. APIUM (Celery).—*Fruit* roundish egg-shaped, of 2 almost distinct *carpels*, each with 5 slender ridges; *bracts* 0. (Name, the Latin name of this or some allied plant.)

8. PETROSELÍNUM (Parsley).—*Fruit* egg-shaped; *carpels* each with 5 slender ridges; *general bracts* few, *partial* many. (Name from the Greek, *petros*, a rock, and *selínon*, parsley.)

9. HELOSCIADIUM (Marsh-wort).—*Fruit* egg-shaped, or oblong; *carpels*, each with 5 slender, prominent ridges; *general bracts* 0, *partial* several. (Name from the Greek, *helos*, a marsh, and *skiádion*, an umbel.)

10. SISON (Stone Parsley).—*Fruit* egg-shaped; *carpels* with 5 slender ridges; *petals* broad, deeply notched, with an inflexed point; *bracts* both general and partial, several. (Name, the Greek for some allied plant.)

11. ÆGOPODIUM (Gout-weed).—*Fruit* oblong; *carpels* with 5 slender ridges; *bracts* 0. (Name in Greek signifying *goat's-foot*, from some fancied resemblance of the leaves.)

12. CARUM (Caraway).—*Fruit* oblong; *carpels* with 5 slender ridges; *general bracts* 0, or rarely 1, *partial* 0. (Name from *Caria*, a country of Asia Minor.)

13. BÚNIUM (Earth-nut).—*Fruit* oblong, crowned with the conical base of the erect *styles*; *carpels* with 5 slender, blunt ridges; *general bracts* 0, *partial* few. (Name from the Greek, *bounos*, a hill, where the plant delights to grow.)

14. PIMPINELLA (Burnet Saxifrage).—*Fruit* oblong, crowned with the swollen base of the reflexed styles; *carpels* with 5 slender ridges, and furrows between; *general bracts* 0, or rarely 1, *partial* 0. (Name of doubtful etymology.)

15. SIUM (Water Parsnep).—*Fruit* nearly globose;

carpels with 5 slender, blunt ridges ; *bracts, general* and *partial*, several. ("Name, according to Théis, from the Celtic word *siw*, water."—*Sir W. J. Hooker.*)

16. BUPLEURUM (Hare's-ear).—*Fruit* oblong ; *carpels* with 5 prominent ridges, crowned at the flat base of the styles ; *partial bracts*, very large. (Name from the Greek, *bous*, an ox, and *pleuron*, a rib, from the ribbed leaves of some species.)

*** *Umbels compound ; fruit not flattened, not prickly, nor beaked.*

17. ŒNÁNTHÉ (Water Dropwort).—*Fruit* egg-shaped, cylindrical, crowned with the long straight *styles ; carpels* with 5 blunt, corky ridges ; *flowers* somewhat rayed, those of the centre only being fertile. (Name from the Greek, *oinos*, wine, and *anthos*, a flower, from the wine-like smell of the flowers.)

18. ÆTHÚSA (Fool's Parsley).—*Fruit* nearly globose ; *carpels* with 5 sharply-keeled ridges, crowned with the reflexed *styles ; partial bracts* 3, all on one side, drooping. (Name from the Greek, *aitho*, to burn, from its acrid properties.)

19. FŒNÍCULUM (Fennel).—*Fruit* elliptical ; *carpels* with 5 bluntly-keeled ridges ; *bracts* 0. (Name from the Latin, *fœnum*, hay, to which it has been compared in smell.)

20. LIGÚSTICUM (Lovage).—*Fruit* elliptical ; *carpels* with 5 sharp, somewhat winged ridges ; *bracts*, both *general* and *partial*, several. (Name from *Liguria*, where the cultivated species abounds.)

21. SILÁUS (Pepper Saxifrage).—*Fruit* egg-shaped ; *carpels* with 5 sharp somewhat winged ridges ; *petals* scarcely notched (yellow) ; *general bracts*, 1 or 2, *partial* several. (Name given by the Romans to some probably allied plant.)

22. MÉUM (Spignel).—*Fruit* elliptical ; *carpels* with 5 sharp, winged ridges ; *petals* tapering at both ends ;

general bracts few, *partial* numerous. (Name, the Greek for this or some allied plant.)

23. CRITHMUM (Samphire).—*Fruit* elliptical; *carpels* spongy, with 5 sharp, winged ridges; *bracts*, both *general* and *partial*, numerous. (Name from the Greek *crithé*, barley, to which grain the fruit bears a fancied resemblance.)

**** *Umbels compound; fruit of two flattened carpels, which are united by their faces, not prickly, nor beaked.*

24. ANGÉLICA.—*Fruit* with three sharp ridges at the back of each *carpel*, and two at the sides, the latter expanding into an even border; *general bracts* few, or 0, *partial* numerous. (Named *angelic*, from its medicinal properties.)

25. PASTINÁCA (Parsnep).—*Fruit* very flat, with a broad border; *carpels* with 3 slender ridges on the back, and 2 near the outer edge of the margin; *general* and *partial bracts*, rarely more than 1; flowers yellow. (Name from the Latin, *pastus*, pasture.)

26. HERACLÉUM (Cow Parsnep).—*Fruit* nearly the same as in *Pastináca; flowers* rayed; *general bracts* several, soon falling off, *partial* numerous. (Name from Hercules, who is said to have brought this, or some allied plant, into use.)

***** *Umbels compound; fruit prickly, not beaked.*

27. DAUCUS (Carrot).—*Fruit* slightly flattened; *carpels* united by their faces, oblong; *ridges* bristly, with a row of prickles between; *general bracts* very long, often pinnatifid. (Name, the Greek name of the plant.)

28. CAÚCALIS (Bur-Parsley).—*Fruit* slightly flattened; *carpels* united by thin narrow edges; *ridges* bristly, with 1—3 rows of hooked prickles between. (Name, the Greek name of the plant.)

29. TORÍLIS (Hedge Parsley).—*Fruit* slightly contracted at the sides; *ridges* of the *carpels* bristly, with

numerous prickles between ; *partial bracts* numerous. (Name of doubtful origin.)

****** *Umbels compound ; fruit more or less beaked.*

30. Scandix (Shepherd's Needle).—*Fruit* contracted at the sides, with a very long beak ; *carpels* with 5 blunt ridges ; *general bracts* 0, *partial* several, longer than the flowers. (Name, the Greek name of the plant.)

31. Anthriscus (Beaked Parsley).—*Fruit* with a short beak ; *carpels* without ridges ; *general bracts* 0, *partial* several. (Name, the Greek name of this or some allied plant.)

32. Chærophyllum (Chervil).—*Fruit* contracted at the sides, with a short beak ; *carpels* with 5 blunt ridges ; *partial bracts* several. (Name in Greek signifying *pleasant leaf*, from the agreeable perfume of some species.)

33. Myrrhis (Cicely).—*Fruit* contracted at the sides, with a deep furrow between the carpels ; *carpels* with 5 sharply-keeled ridges ; *general bracts* 0, *partial* several. (Name from the Greek, *myrrha*, myrrh, from the fragrance of the leaves.)

HYDROCÓTYLÉ VULGARIS (*Common White-rot, Marsh Pennywort*).

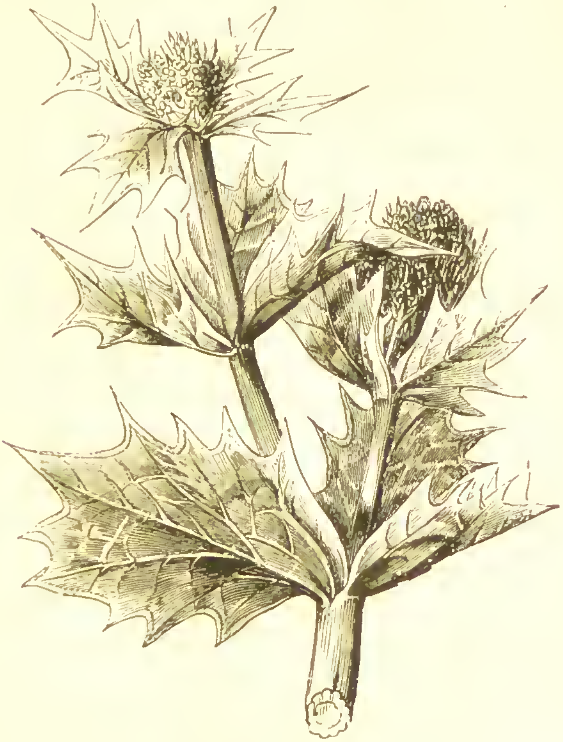
1. Hydrocótylé (*White-rot*).

1. *H. vulgáris* (Common White-rot, Marsh Pennywort).—The only British species ; common in marshes and bogs. A small creeping plant, very unlike the rest of the umbelliferous tribe, with round, smooth, crenate *leaves*, 1—1½ inch across, and inconspicuous heads of about 5, minute, reddish-white *flowers*, which never rise above the leaves, and require a close search to be detected at all. Each leaf is attached by its centre to the stalk, and resembles a little platter.—Fl. May, June. Perennial.

SANÍCULA EUROPÆA (*Wood Sanicle*).

2. Sanícula (*Sanicle*).

1. *S. Europæa* (Wood Sanicle).—The only British species; common in woods. A slender, smooth plant, about 1½ foot high, with glossy *leaves*, which are 3—5-lobed, and cut. The *flowers* are dull white, and grow in panicled heads, rather than umbels, and are succeeded by roundish *seeds*, which are covered with hooked prickles.—Fl. June, July. Perennial.

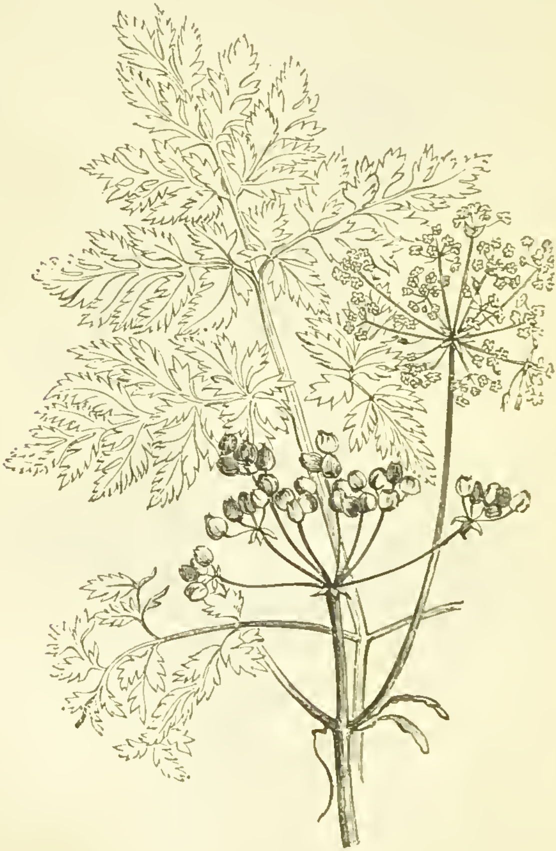


ERYNGIUM MARÍTIMUM (*Sea Eryngo, Sea Holly*).

3. Eryngium (*Eryngo*).

1. *E. marítimum* (Sea Eryngo, Sea Holly).—A stout prickly plant, with more of the habit of a Thistle than

one of the Umbelliferous tribe. The whole plant is remarkably rigid and glaucous. The *flowers* are blue, and grow in dense heads. The *roots* are large, fleshy, and brittle, and extend for a distance of many feet into the sand. When candied they form a well-known sweetmeat.—Fl. July, August. Perennial.



CONIUM MACULATUM (*Common Hemlock*).

A second British species, *E. campéstré* (Field Eryngo), grows at Stonehouse, Devonshire, and in two or three other places, but it is very rare. It resembles the last in habit, but is taller and more slender.

4. CONÍUM (*Hemlock*).

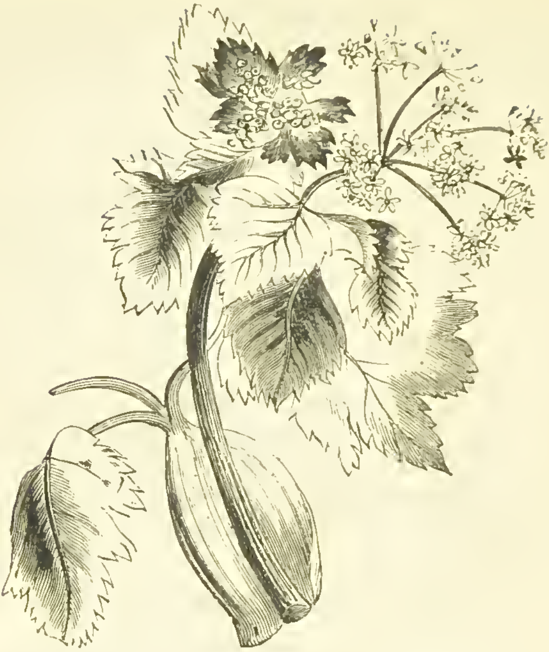
1. *C. maculátum* (Common Hemlock).—A tall, much branched and gracefully growing plant, with elegantly cut foliage, and white flowers. Country people are in the habit of calling by the name of *Hemlock* many species of umbelliferous plants. The real Hemlock may, however, be accurately distinguished by its slender growth, perfectly smooth *stem*, which is spotted with red; by its finely divided *leaves*, which are also smooth, and by the *bracts* at the base of the partial *umbels*, which only go half way round. It usually grows from 2 to 4 feet high, but in sheltered situations it sometimes attains more than double that height.—Fl. June, July. Biennial.

5. SMÝRNIUM (*Alexanders*).

1. *S. Olusátrum* (Common Alexanders).—A tall and stout plant, growing in waste ground, especially near the sea; well distinguished from any other plant of the tribe by its broad, bright green, glossy *leaves*, which grow in threes, and by its numerous large *umbels* of greenish yellow *flowers*. The *stem* is smooth, 3—4 feet high, furrowed and hollow. The *seeds* are nearly black when ripe. The young shoots are sometimes boiled and eaten.—Fl. May, June. Biennial.

6. CICÚTA (*Cowbane*).

1. *C. virósa* (Cowbane, Water-Hemlock).—Ponds and ditches; rare. A poisonous, aquatic species; distinguished by its very stout hollow *stem*, pinnate and long-stalked lower *leaves*, twice ternate upper *leaves*, and stalked *umbels* of white *flowers*. The name *Water-Hem-*



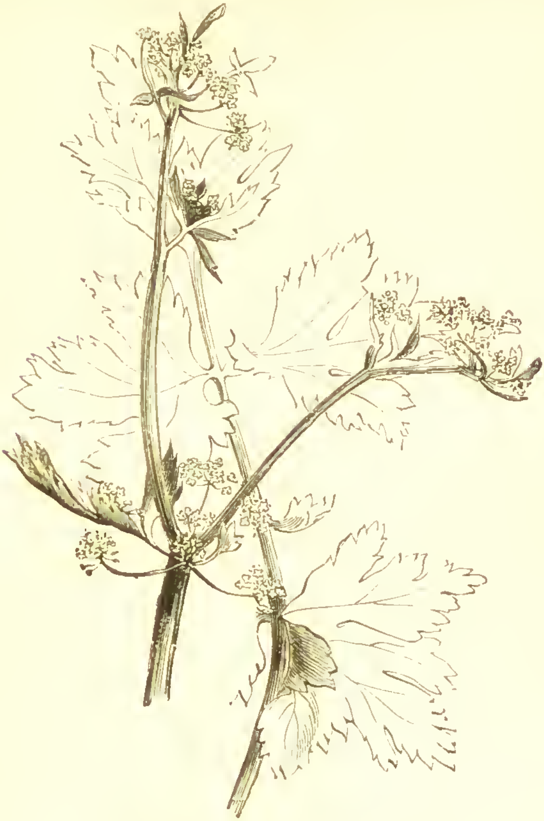
SMYRNIUM OLUSÁTRUM (*Common Alexanders*).

lock is often applied to several species of *Œnanthé*, which are also very poisonous.—Fl. July, August. Perennial.

7. Ápium (*Celery*).

1. *A. gravéolens* (Celery, Smallage).—Moist places near the sea. The origin of the garden Celery, and unmistakeably distinguished by its strong flavour and odour, which in no respect differ from those of the garden plant. The *stem* is usually 1—2 feet high, branched, and leafy, but sometimes nearly prostrate. The *flowers* are small and white, and grow either in terminal or axillary *umbels*, which are often sessile and unequal. In its wild state the plant is not eatable, but

when it has been cultivated on rich soil, and the leaf-stalks have been blanched by being deprived of light, it is a wholesome vegetable.—Fl. June—September. Biennial.

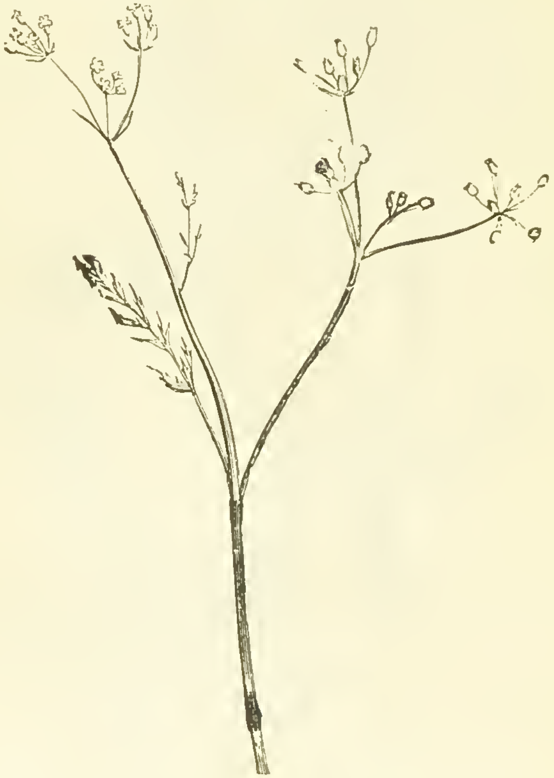


ÁPIUM GRAVÉOLENS (*Celery, Smallage*).

8. PETROSELÍNUM (*Parsley*).

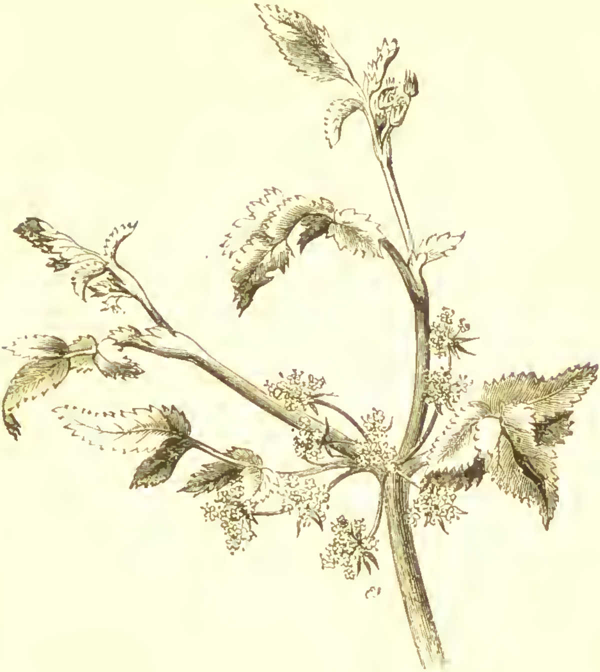
1. *P. ségetum* (Corn Parsley).—Corn fields and waste places; not uncommon. Well distinguished by its

slender, branched *stem*, which is remarkably tough and wiry, by its small pinnated *leaves*, and *umbels* of small whitish *flowers*, and by the *rays* of the umbel being few and very unequal in length. The root-leaves wither early, and the few which grow on the stem are small and inconspicuous.—Fl. August, September. Biennial.



PETROSELÍNUM SÉGETUM (*Corn Parsley*).

* *P. satívum* is the common Parsley of gardens, which, though often found seemingly wild, is not really indigenous.



HELOSCIADIUM NODIFLŌRUM (*Procumbent Marsh-wort*).

9. HELOSCIADIUM (*Marsh-wort*).

1. *H. nodiflōrum* (Procumbent Marsh-wort).—*Stem* prostrate and rooting; *leaves* pinnate; *leaflets* egg-shaped, serrated; *umbels* on very short stalks, opposite the leaves.—In ditches and rivulets; abundant. A plant with somewhat of the habit of Water-cresses, in company with which it often grows, and for which it is sometimes mistaken. It may be distinguished, when out of flower, by its serrated and somewhat pointed *leaves*, and by its hollow *stems*. The flowers are small and white.—Fl. July, August. Perennial.

* *H. repens* is a smaller plant, and has narrower *leaves*, but is scarcely a distinct species: *H. inundatum*

(Least Marsh-wort) has the lower *leaves* finely divided into numerous hair-like segments. The *umbels* usually have only two rays of small white *flowers*, and, with the upper leaves, are the only parts of the plant which rise out of the water.

10. SISON (*Stone Parsley*).

1. *S. Amómum* (Hedge Stone Parsley).—The only species.—Damp chalky places. A slender plant, 2—3 feet high, with a wiry, branched *stem*, and pinnate, cut *leaves*, the *leaflets* of the upper ones being very narrow. The general *umbels* consist of about 4 *rays*, with 2—4 *bracts* at the base; the *partial umbels* are small, and have 4 *bracts* at the base of each; the flowers are cream-coloured and very small. The whole plant has a nauseous smell.—Fl. August. Biennial.

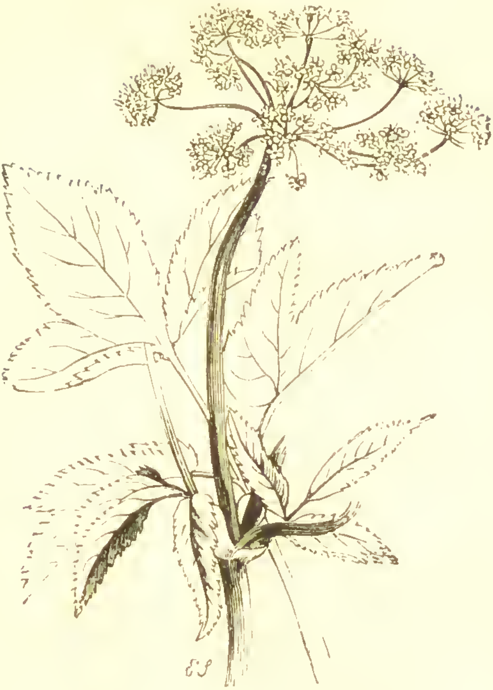
11. ÆGOPODIUM (*Gout-weed*).

1. *Æ. Podagraria* (Common Gout-weed).—A common and very troublesome garden weed, with a creeping *root*, large, thrice ternate *leaves*, and white *flowers*. The *stems* grow about a foot high. The leaves are sometimes boiled and eaten, but have a strong and very disagreeable flavour.—Fl. May, June. Perennial.

12. CARUM (*Caraway*).

1. *C. Carui* (Common Caraway).—A doubtful native, but occasionally growing wild in several parts of Great Britain. The *root* is spindle-shaped, the *stem* is much branched, about 2 feet high, the *leaves* twice pinnate, with leaflets cut into very narrow segments; the *flowers* are white, and grow in rather large umbels, with rarely more than one *bract*, and that at the base of the general umbel. The seeds are too well known to need any description.—Fl. June. Biennial.

* *C. verticillatum* (Whorled Caraway) is a smaller plant with pinnate *leaves*, the *leaflets* of which are divided to the base into very numerous hair-like seg-



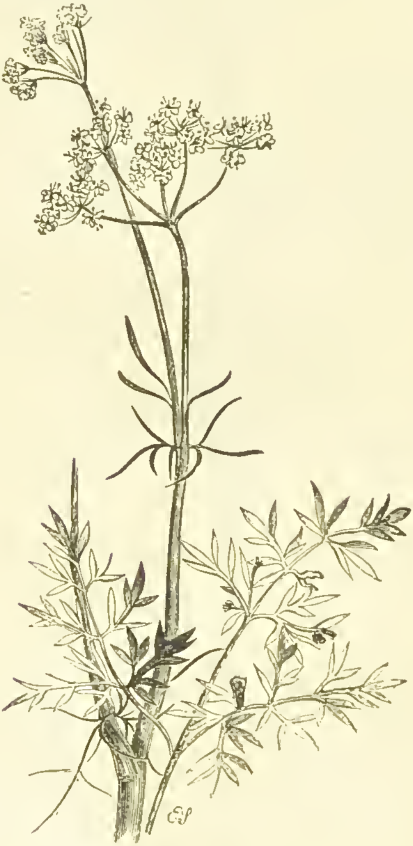
ÆGOPODIUM PODAGRARIA (*Common Gout-weed*).

ments, and are so crowded as to appear whorled. Very rare, except in the west of Scotland: *C. Bulbocástanum* (Tuberous Caraway) is a local plant, so abundant in the chalk district near Baldock, in Hertfordshire, that "the farmers turn their pigs upon the fallows to feed upon the roots." *Hooker and Arnott.* Found also in Cambridgeshire, but scarcely known elsewhere.

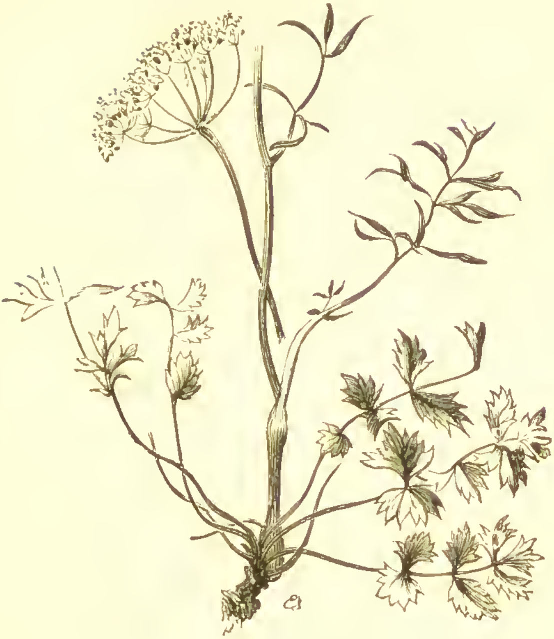
13. Búnium (*Pig-nut*).

1. *B. flexuósum* (Common Pig-nut).—A very slender plant, about a foot high, bearing a few finely divided

leaves, and terminal umbels of white *flowers*. The root, which resembles a small potato in shape, and is covered with a thin skin easily removed, is eatable, but only fit for the food of the animal after which it is named.—Fl. May, June. Perennial.



BÚNIUM FLEXUÓSUM (*Common Pig-nut*).

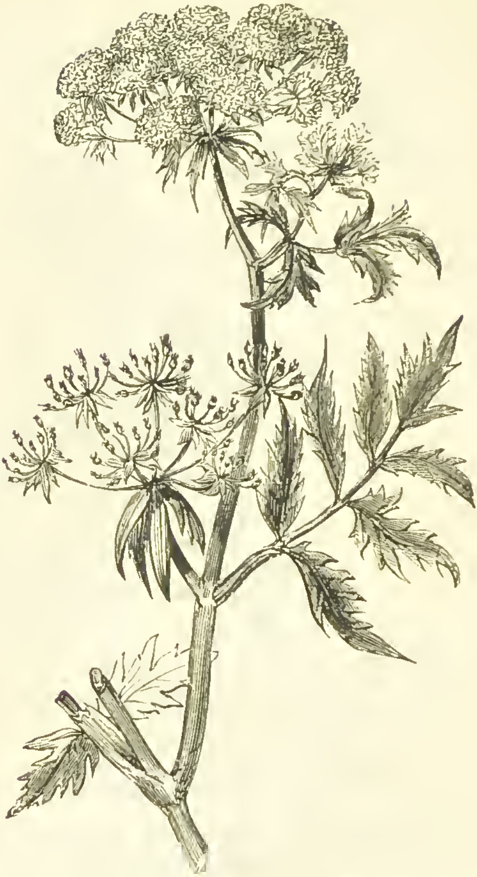


PIMPINELLA SAXIFRAGA (*Common Burnet Saxifrage*)

14. Pimpinella (*Burnet Saxifrage*).

1. *P. Saxifraga* (Common Burnet Saxifrage).—A slender plant, 1—2 feet high, common in dry pastures. The lower leaves, which are pinnate, with sharply cut leaflets, grow on long stalks ; the upper ones are twice pinnate, and deeply cut into very narrow, sharp segments.—Fl. July, August. Perennial.

P. magna (Greater Burnet Saxifrage) is stouter and larger than the last, and has all the *leaves* pinnate, the terminal *leaflet* on each being 3-lobed. It grows in shady places, but is far from common,



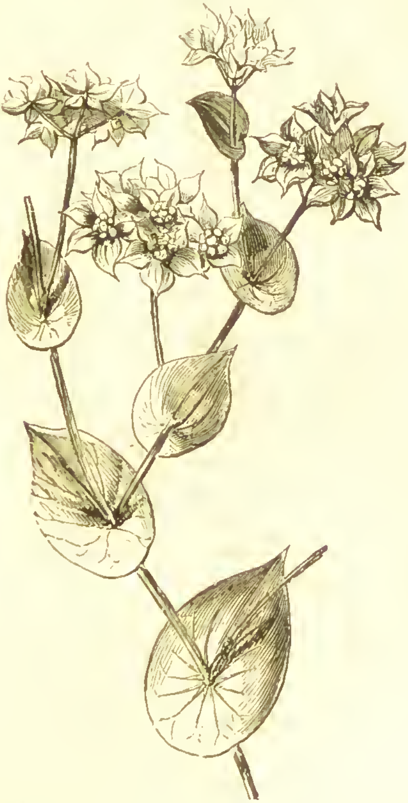
SIUM ANGUSTIFOLIUM (*Narrow-leaved Water Parsnep*).

15. Sium (*Water Parsnep*).

1. *S. latifolium* (Broad-leaved Water Parsnep).—*Leaves* pinnate; *leaflets* narrow, oblong, pointed, equally serrated; *umbels* terminal; *bracts*, both *general* and *partial*, narrow and pointed.—Watery places; not common. A stout plant, with a furrowed stem, 3—5 feet high, pinnated leaves of 5—13 large and distant leaflets,

and long, flat umbels of white flowers.—Fl. July, August. Perennial.

2. *S. angustifolium* (Narrow-leaved Water Parsnep).—*Leaves* pinnate ; *leaflets* unequally cut, egg-shaped, the upper ones narrower ; *umbels* opposite the leaves, stalked.—Watery places ; not unfrequent. Smaller than the last, and resembling *Helosciádium nodiflórum*, from which it may be distinguished by its stalked *umbels*, and by its having general and partial *bracts*, which are reflexed and often cut.



BUPLEURUM ROTUNDIFOLIUM (*Common Thorow-wax, Hare's-ear*).

16. BUPLEURUM (*Thorow-wax*).

1. *B. rotundifolium* (Common Thorow-wax, Hare's-ear). —*Stem* branched above ; *leaves* roundish, egg-shaped, undivided, perfoliate ; *general bracts* wanting, *partial* ones large, bristle pointed, thrice as long as the flowers.—Corn-fields, on a chalky soil. A singular plant, well distinguished by its perfoliate leaves, which have a glaucous hue, and by its large, greenish yellow, partial bracts, which are far more conspicuous than the minute yellow flowers.—Fl. July. Annual.

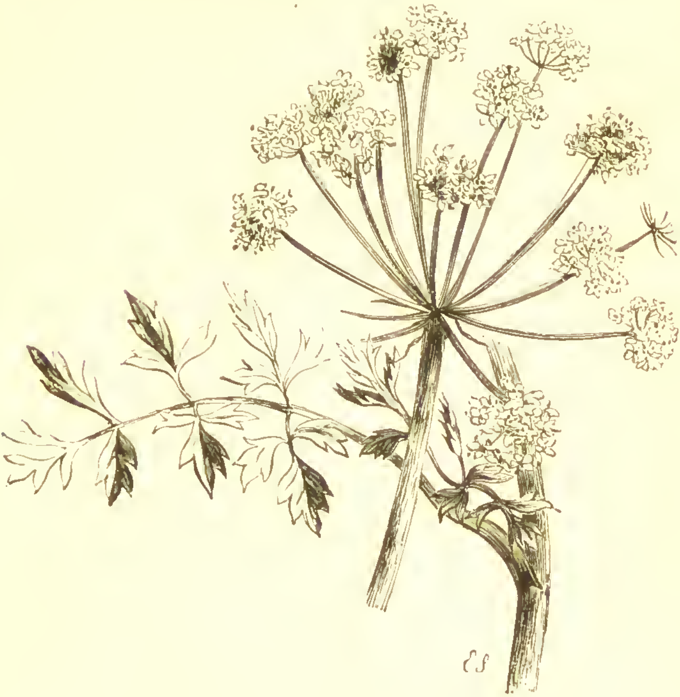
2. *B. tenuissimum* (Slender Hare's-ear) is remarkable for its slender, wiry *stem*, about a foot high, its very narrow undivided *leaves*, and small *umbels* of very few, minute, yellowish *flowers* ; it grows in salt marshes on the south and east coasts of England : *B. aristatum* (Narrow-leaved Hare's-ear) is a small plant, 3—4 inches high, with pale, rigid *leaves*, inconspicuous greenish *flowers*, and large, sharp pointed *bracts*. It is found nowhere in Great Britain but on the cliffs at Torquay, Devon.

17. ŒNANTHÉ (*Water Dropwort*).

1. *Œ. fistulosa* (Tubular Water Dropwort).—*Root* sending out runners ; *stem-leaves* pinnate, shorter than their tubular stalks.—Watery places ; not uncommon. Well marked by its tubular stems, leaves, and leaflets. The lower leaves are entirely submersed, and of these the leaflets are flat, but all the rest of the plant consists of a series of tubes. The *umbels* are of very few rays, which when in fruit are nearly globular.—Fl. July, August. Perennial.

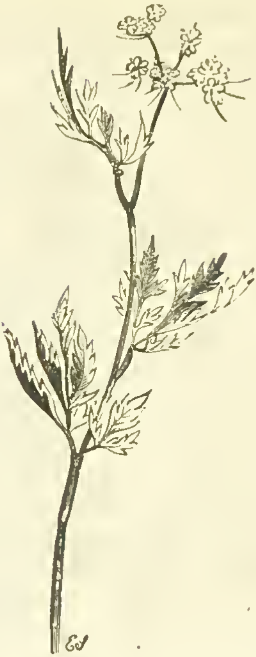
2. *Œ. crocáta* (Hemlock Water Dropwort).—*Leaves* thrice pinnate ; *leaflets* wedge-shaped, variously cut.—Watery places, common.—A large and stout plant, 3—5 feet high, with clustered, tuberous roots, somewhat like those of the Dahlia, spreading, glossy leaves, and large umbels of white flowers. The plant is popularly known by the name of *Water Hemlock*, and, being very poison-

ous, should not be allowed to grow in places where cattle are kept, as instances are numerous in which cows have been poisoned by eating the roots.



ŒNÁNTHÉ CROCÁTA (*Hemlock Water Dropwort*).

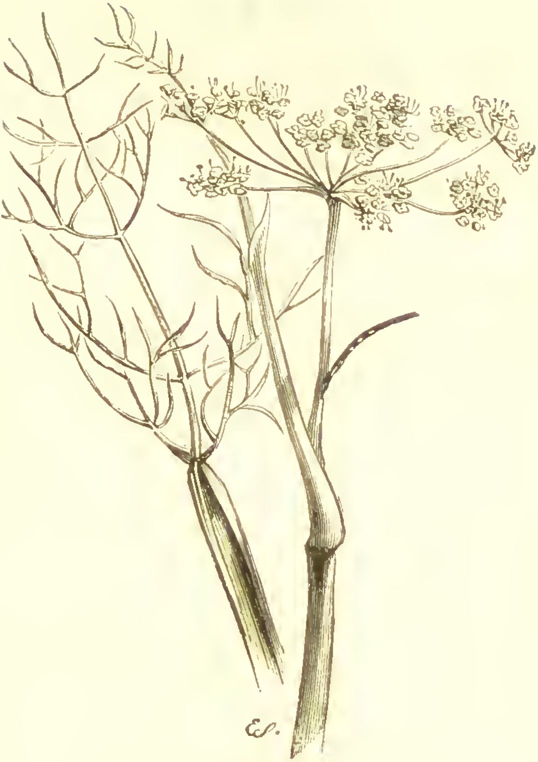
* *Œ. Phellandrium* differs from the preceding in having the *leaves* divided into very fine segments, and fibrous, not tuberous, *roots*. *Œ. pimpinelloídes* is a much slenderer plant, with very narrow *leaflets* and small white *flowers* crowded into round *heads;* it grows in marshes, both salt and fresh: *Œ. Lachinálii* is allied to it, but has the umbels lax, and grows only in salt marshes. *Œ. silaifólia* resembles the last, but grows in fresh water.



ÆTHÚSA CYNAPIUM (*Fool's Parsley*).

18. ÆTHÚSA (*Fool's Parsley*).

1. *Æ. Cynapium* (Fool's Parsley).—A slender plant about a foot high, with dark green, doubly pinnate *leaves*, and terminal *umbels* of white *flowers*. It is a common garden weed, and in its young state somewhat resembles Parsley, but when in flower may readily be distinguished from that and all other umbelliferous plants, by having no *general bracts*, but at the base of each *partial umbel* three very long and narrow *leaves*, which are all on the outer side, and point downwards. It is said, and probably with reason, to be poisonous.—Fl. July, August. Annual.



FŒNÍCULUM VULGÁRÉ (*Common Fennel*).

19. FŒNÍCULUM (*Fennel*).

1. *F. vulgáre* (Common Fennel).—Waste places, especially near the sea, common. A well-known plant, with an erect rod-like *stem*, numerous *leaves*, which are deeply divided into soft hair-like segments, and large terminal *umbels* of yellow *flowers*. The whole plant is aromatic, and the chopped leaves are often used as an ingredient in sauce for fish.—Fl. July, August. Perennial.

20. Ligústicum (*Lovage*).

1. *L. Scóticum* (Scottish Lovage).—Rocky sea-shore in Scotland and Northumberland. About 1½ foot high, *stem* nearly simple, tinged with red; *leaves* twice ternate, with large broad serrated leaflets, *umbels* with general and partial *bracts*; *flowers* reddish-white.—Fl. July. Perennial.

21. Siláus (*Pepper Saxifrage*).

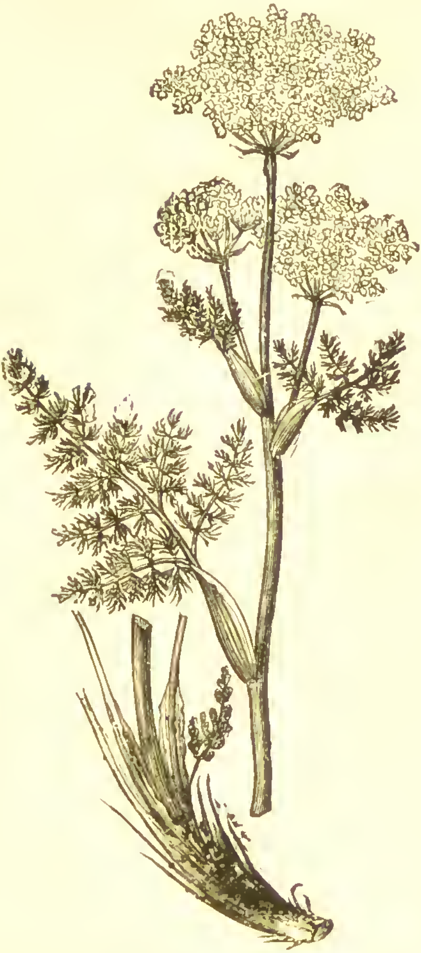
1. *S. pratensis* (Meadow Pepper Saxifrage).—Meadows, not very general. From 1—2 feet high; *leaves* thrice pinnate, with narrow opposite leaflets, and terminal *umbels* of dull yellowish-white *flowers*; *general bracts* 1—3, *partial*, numerous.—"The whole plant being fetid when bruised, is supposed in some parts of Norfolk to give a bad flavour to milk and butter; but cattle do not eat it, except accidentally, or in small quantities, though sufficient perhaps to have the effect in question."—*Sir J. E. Smith.*—Fl. July—September. Perennial.

22. Méum (*Spignel*).

1. *M. athamánticum* (Spignel, Meu, *or* Bald-Money).—Dry mountainous pastures in the north. Well distinguished by its twice pinnate *leaves*, the *leaflets* of which are divided into numerous thread-like segments. The whole plant, and especially the root, which is eaten by the Highlanders, is highly aromatic, with a flavour like Melilot, which it communicates to milk and butter, from the cows feeding on its herbage in spring.—"Bald, or Bald-Money, is a corruption of *Balder*, the *Apollo* of the northern nations, to whom this plant was dedicated."—*Sir W. J. Hooker.*—Fl. June, July. Perennial.

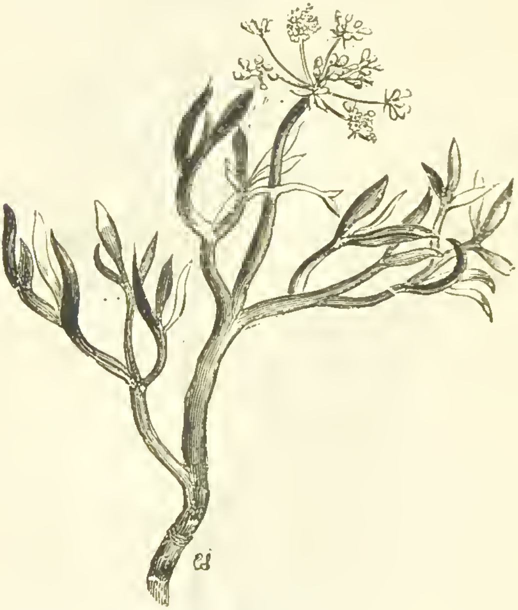
23. Crithmum (*Samphire*).

1. *C. marítimum* (Sea Samphire).—Rocks by the seaside, abundant. Well distinguished by its long, glaucous,



MEUM ATHAMÁNTICUM (*Spignel, Meu, or Bald-Money*).

fleshy *leaflets,* and yellow *flowers.* The whole plant is aromatic, and has a powerful scent. The young leaves, if gathered in May, sprinkled with salt, and preserved in vinegar, make one of the best of pickles. On those parts of the coast where Samphire does not abound, other plants, which resemble it in having fleshy leaves, are sometimes sold under the same name, but are very inferior.—Fl. July, August. Perennial.

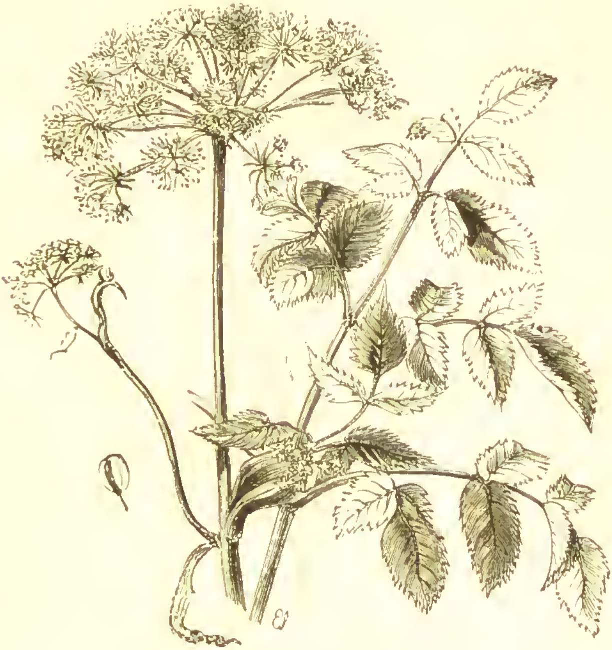


CRITHMUM MARÍTIMUM (*Sea Samphire*).

24. ANGÉLICA.

1. *A. sylvestris* (Wild Angélica).—Wet places, common. A stout and tall plant, 2—4 feet high: the *stem* is furrowed, tinged with purple, and slightly downy,

especially in its upper part; the *leaves* are twice pinnate; the *leaflets* egg-shaped and serrated, the *umbels* are large, and furnished with both *general* and *partial bracts;* the *flowers* are white, tinged with pink.—Fl. July. Perennial.



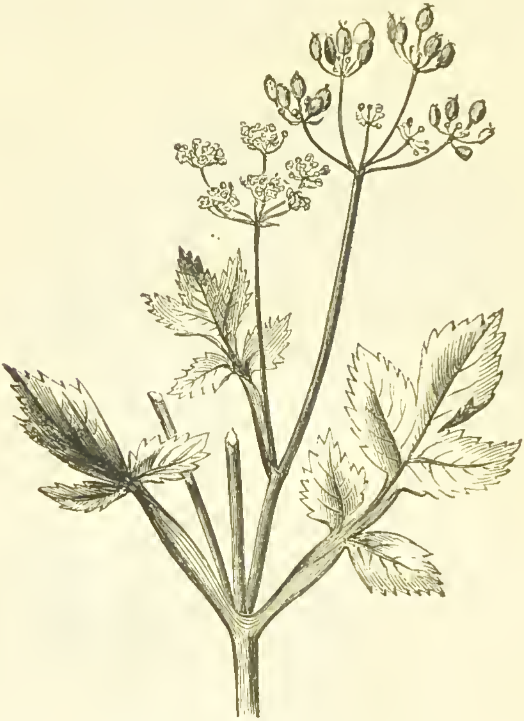
ANGELICA SYLVESTRIS (*Wild Angélica*).

* *A. Archangélica* is a larger species, commonly cultivated for the sake of its aromatic stems, which when candied form a favourite sweetmeat.

25. Pastináca (*Parsnep*).

1. *P. satíva* (Common Parsnep).—Well known in gardens as an agreeable and nutritive vegetable. In its wild state, the plant, which is not uncommon in lime-

stone and chalky pastures, closely resembles the cultivated variety, but has smaller roots and more downy leaves. The *flowers* are yellow, and grow in terminal *umbels.*—Fl. July, August. Biennial.

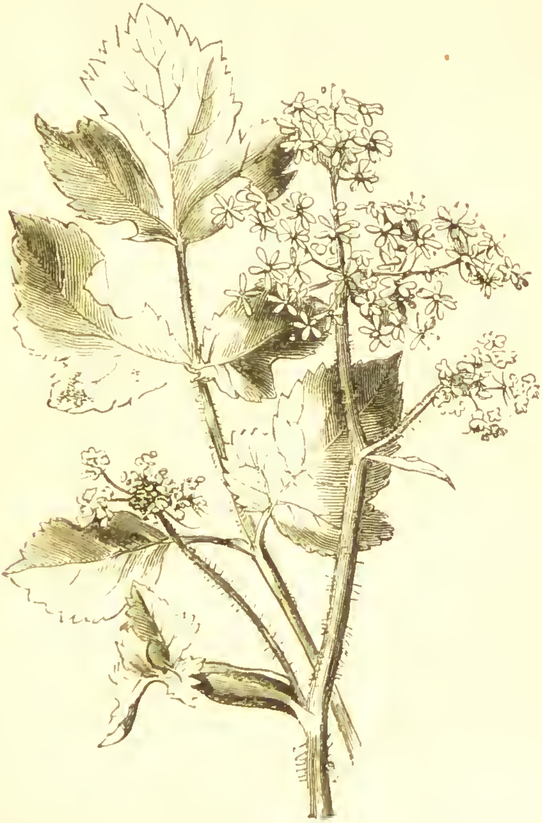


PASTINÁCA SATÍVA (*Common Parsnep*).

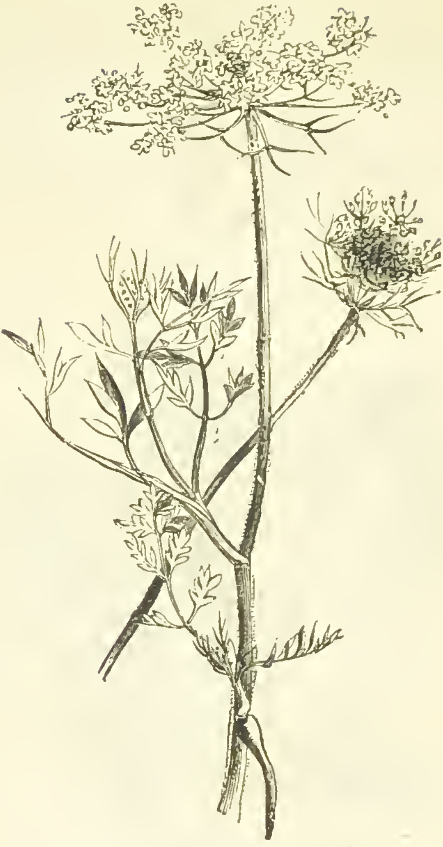
26. HERACLÉUM (*Cow-Parsnep*).

1. *H. Sphondýlium* (Common Cow-Parsnep, Hogweed).—A very tall and stout plant, with a channeled, hairy *stem*, 4—6 feet high, large, irregularly cut, rough *leaves*, and spreading *umbels* of conspicuous white *flowers*.

In spring the plant is remarkable for the large oval tufts formed by the sheathing base of the stem leaves, which contain the flower buds. This, with many other umbelliferous plants, is often confounded by farmers with Hemlock, and great pains are taken to eradicate it; but cattle eat it with impunity, and it is probably a wholesome and nutritive food. It is often very abundant in meadows.—Fl. July. Biennial.



HERACLÆUM SPHONDYLIUM (*Common Cow-Parsnep, Hog-weed*).



DAUCUS CARÓTA (*Wild Carrot*).

27. Daucus (*Carrot*).

1. *D. Caróta* (Wild Carrot).—A tough-stemmed bristly plant, with much-cut *leaves*, and large *umbels* of dull white *flowers*. Well distinguished by having the central *flower* or *partial umbel* of flowers bright red or deep purple. In flavour and scent it resembles the garden carrot.—Fl. July, August. Biennial.

* A variety (*D. marítimus*), abundant on many parts of the sea-coast, differs from the preceding in having somewhat fleshy leaves, and in being destitute of the central purple flower, or umbel.

28. CAÚCALIS (*Bur-Parsley*).

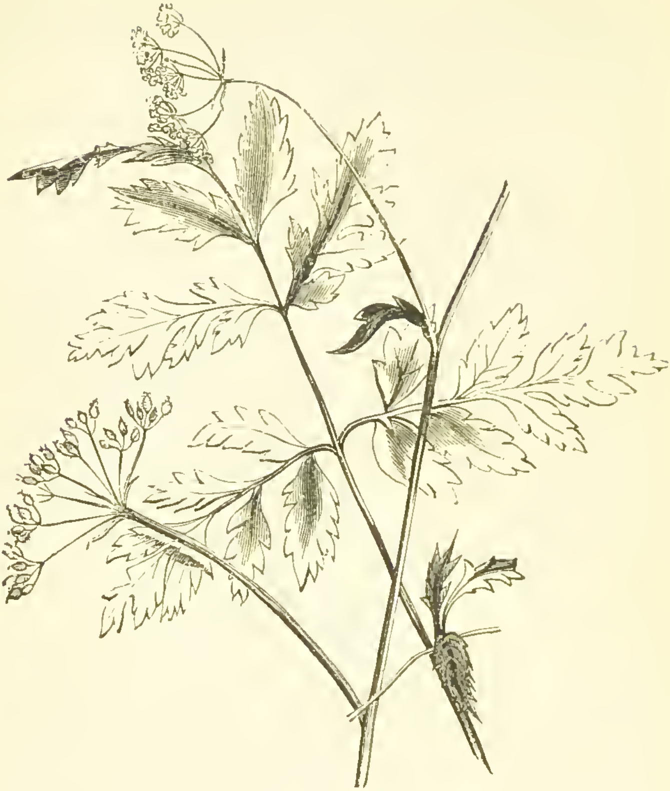
1. *C. daucoídes* (Small Bur-Parsley).—*Leaves* repeatedly divided ; *umbels* of about 3 rays, without bracts ; *partial umbels* of few flowers, with about 3 bracts.—Chalky fields, not common. A somewhat bushy plant, nearly smooth, with a stem which is deeply furrowed and hairy at the joints. The flowers, which are pinkish white, grow both in lateral and terminal umbels, and are succeeded by large prickly seeds.—Fl. June. Annual.

* *C. latifólia* (Great Bur-Parsley) was formerly not uncommon in chalky fields in Cambridgeshire, but is now extinct there. It is taller than the preceding, and is well distinguished from it and all other British plants of the tribe by its handsome, large, rose-coloured flowers.

29. TORÍLIS (*Hedge-Parsley*).

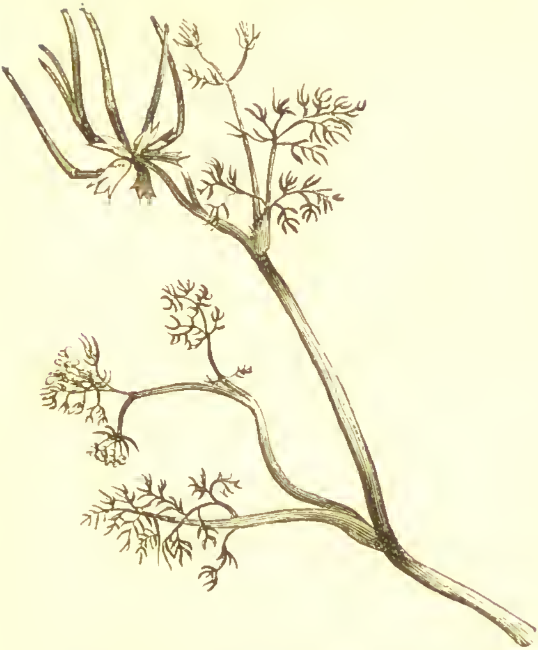
1. *T. Anthriscus* (Upright Hedge-Parsley).—*Leaves* twice pinnate ; *leaflets* narrow, sharply cut ; *umbels* stalked ; *general* and *partial bracts* several.—Hedges, abundant. A tall slender plant 2—3 feet high, with a solid rough stem, hairy leaves, and many-rayed umbels of small white or pinkish flowers. The fruit is thickly covered with incurved rigid bristles.—Fl. July, August. Annual.

2. *T. infesta* (Spreading Hedge-Parsley).—*Leaves* twice pinnate ; *leaflets* oblong, sharply cut ; *umbels* stalked ; *general bracts* 1 or 0, *partial* several.—Hedges, common. Smaller than the last, 6—18 inches high, with more branched stems and more rigid leaves. The fruit is covered with spreading hooked bristles.—Fl. July, August. Annual.



TORÍLIS ANTHRISCUS (*Upright Hedge-Parsley*).

3. *T. nodósa* (Knotted Hedge-Parsley).—*Stem* prostrate ; *umbels* simple, lateral, nearly sessile.—Hedges and waste places, common. Well distinguished from all other British umbelliferous plants by its prostrate mode of growth, its very small, almost globular umbels of whitish flowers, and by the outer carpels in each umbel being covered with hooked prickles, while the inner are warty.—Fl. May, July. Annual.



SCANDIX PECTEN (*Shepherd's Needle, Venus' Comb*).

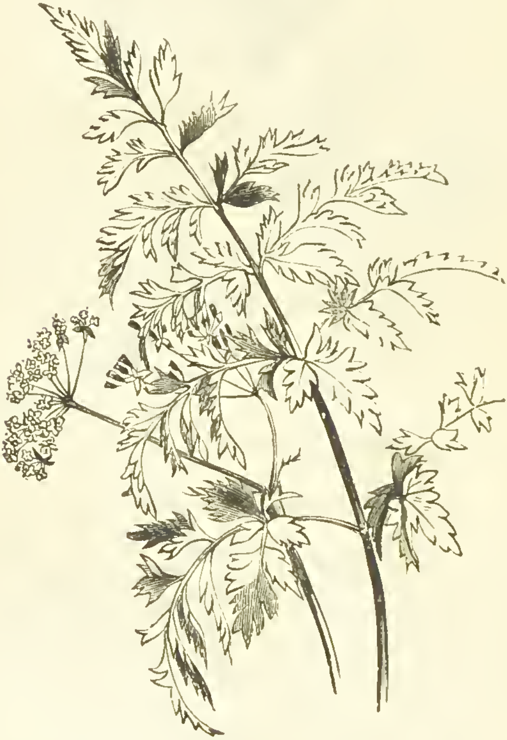
30. SCANDIX (*Shepherd's Needle*).

1. *S. Pecten* (Shepherd's Needle, Venus' Comb).—Common in cultivated ground. A small plant, 3—9 inches high, with finely-cut bright-green *leaves*, and few-rayed umbels of small white *flowers*, which are succeeded by long, beaked *seed-vessels*.—Fl. June, September. Annual.

31. ANTHRISCUS (*Beaked-Parsley*).

1. *A. vulgáris* (Common Beaked-Parsley).—*Stem* smooth; *leaves* thrice pinnate, with blunt segments; *umbels* lateral on rather short stalks; *fruit* bristly.—Waste ground, chiefly near towns. Remarkable for its

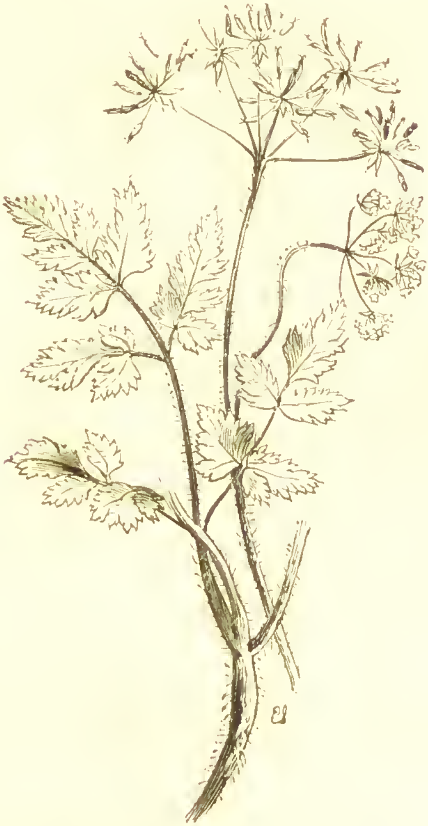
smooth, polished stem and delicate green leaves, which are slightly hairy beneath. The stem is 2—3 feet high, slightly swollen under each joint. The flowers are white, and grow in umbels opposite the leaves, without general bracts; partial bracts 5 or 6, with fringed edges.—Fl. May. Annual.



ANTHRISCUS SYLVESTRIS (*Wild Beaked-Parsley*).

2. *A. sylvestris* (Wild Beaked-Parsley).—*Stem* slightly downy below, smooth above; *leaves* thrice pinnate, the

segments rough-edged ; *umbels* terminal on long stalks, drooping when young ; *fruit* smooth.—Hedges, common. One of our early spring flowers, distinguished, when in bud, by the drooping partial umbels, each of which has about 5 reflexed bracts ; and afterwards, by its smooth, shortly-beaked fruit.—Fl. April, June. Perennial.



CHÆROPHYLLUM TEMULENTUM (*Rough Chervil*).

* *A. Cerefolium* (Garden Chervil) is not a native plant, though sometimes found in the neighbourhood of houses. It may be distinguished from the preceding by having only 3 partial *bracts*, lateral *umbels*, and smooth *fruit*.

32. CHÆROPHYLLUM (*Chervil*).

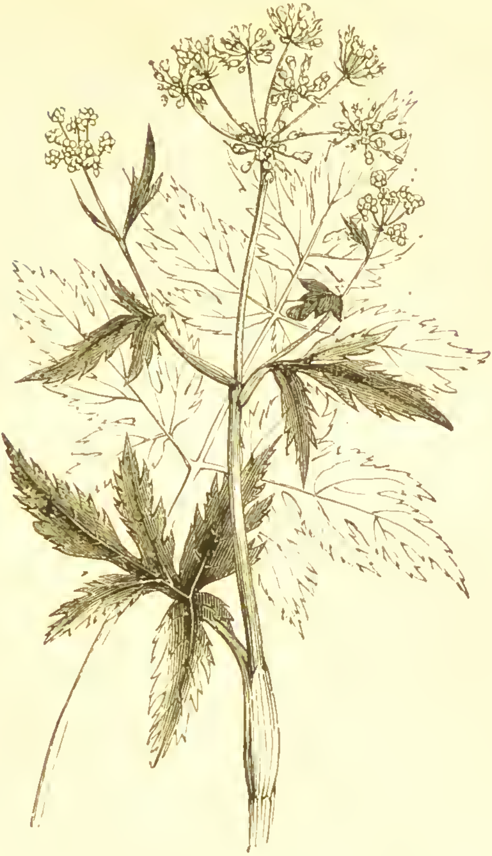
1. *C. temulentum* (Rough Chervil).—The only British species, very common in woods and hedges. The *stem* is slender, 2—3 feet high, rough with short hairs, spotted with purple, and swollen beneath the joints; the *leaves* are twice pinnate, deeply lobed and cut, hairy, often making the plant conspicuous in autumn by their rich purple hue; the *flowers* are white and grow in terminal *umbels*, which droop when in bud; *general bracts* either absent or very few, *partial bracts* several, fringed and deflexed.—Fl. June, July. Perennial.

33. MYRRHIS (*Cicely*).

1. *M. odoráta* (Sweet Cicely).—Mountainous pastures in the North. Remarkable for its sweet and highly aromatic flavour. The *stem* is 2—3 feet high, furrowed and hollow; the *leaves* are large, thrice pinnate, cut, and slightly downy. The *flowers* are white, and grow in terminal downy umbels; *bracts* partial only, whitish and finely fringed. The *fruit* is remarkably large, an inch long, dark brown, with very sharp *ribs*, and possesses the flavour of the rest of the plant in a high degree.—Fl. May, June. Perennial.

The foregoing descriptions contain only those umbelliferous plants which are most commonly to be met with. There are besides these a few others, which are either of unusual occurrence, or have escaped from cultivation; these are:—

Physospernum Cornubiense (Cornish Bladder-seed).—An erect, smooth plant, about two feet high, with thrice



PHYSOSPERMUM CORNUBIENSE (*Cornish Bladder-seed*).

ternate *leaves* and white *flowers*, which are furnished with both *general* and *partial bracts*. The *fruit* when ripe is remarkably inflated and nearly globose, whence its name. It is found only near Bodmin, Cornwall, and Tavistock, Devon.

Trínia glabérrima (Honewort) grows on limestone rocks in Somersetshire, and at Berry-head, Devon. It may be distinguished from all other British umbelliferous plants by bearing its *stamens* and *pistils* in separate flowers and on different plants.

Séseli Libanótis (Mountain Meadow-Saxifrage) is of rare occurrence, in Cambridgeshire and Sussex. It may be distinguished by its hemispherical *umbels* and hairy *fruit*, crowned by the reflexed *styles*.

Peucédanum officinálé (Sea Hog's Fennel), a rare plant, remarkable for its large umbels of yellow *flowers*, occurs in salt marshes on the eastern coast of England. *P. palustre* (Marsh Hog's Fennel) is also a rare species, growing in marshes in Yorkshire, Lancashire, &c. The *stem* grows 4—5 feet high, and abounds in a milky juice, which dries to a brown resin.

Coriandrum satívum (Common Coriander) is occasionally found in the neighbourhood of towns, but cannot be deemed a native plant. It is well marked by its globose, pleasantly aromatic *fruit*.

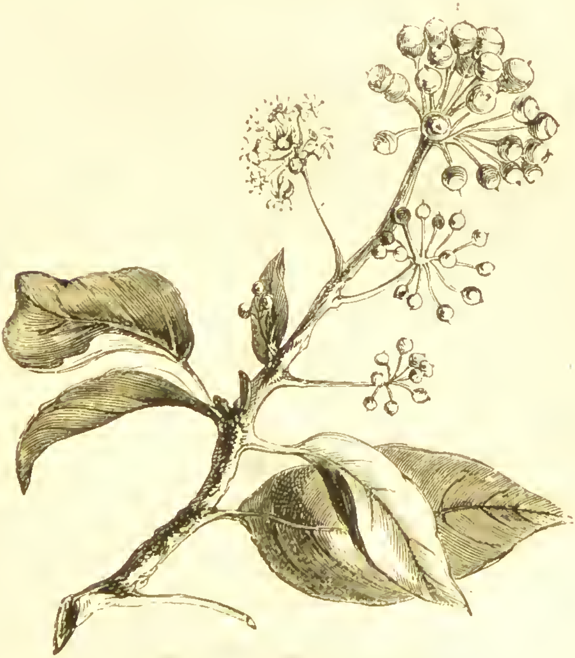
ORD. XXXIX.—ARALIACEÆ.—THE IVY TRIBE.

Calyx attached to the ovary, 4—5-cleft; *petals* 4, 5, or 10, occasionally wanting; *stamens* equalling the petals in number, or twice as many, inserted on the ovary; *ovary* with more than 2 cells; *styles* as many as the cells; *fruit* fleshy or dry, of several 1-seeded cells.—Trees, shrubs, or herbaceous plants, not confined to any particular climate, closely resembling the Umbelliferous Tribe in the structure of their flowers, but not partaking their dangerous properties. Only two species are natives of Britain; but one of these, Ivy, is so universally diffused as to be familiar to every one; the other, Moschatell, is a humble plant, with solitary heads of green flowers, and delicate leaves strongly scented with musk. *Ginseng*, the favourite medicine of the Chinese, is the root of some species of *Panax*, a plant belonging to this tribe. Some species of Ivy furnish wood scented like Lavender and Rosemary, and others an aromatic gum.

A remarkable plant belonging to this order is *Gunnera scabra*, found by Darwin growing on the sandstone cliffs of Chiloe. He describes it as somewhat resembling Rhubarb on a gigantic scale, each plant producing four or five leaves nearly eight feet in diameter.

1. HÉDERA (Ivy).—*Calyx* of 5 teeth, inserted on the ovary; *petals* 5—10; *stamens* 5—10; *styles* 5—10, often combined into 1; *berry* 5-celled and 5-seeded, crowned by the calyx. (Name, the Latin name of the plant.)

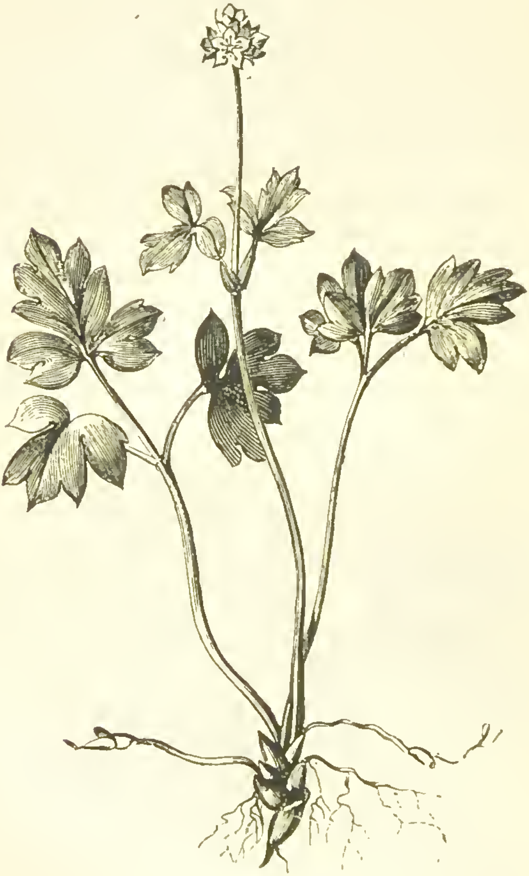
2. ADOXA (Moschatell).—*Calyx* 3-cleft, inserted above the base of the ovary; *corolla* 4 or 5-cleft, inserted on the ovary; *stamens* 8 or 10, in pairs; *anthers* 1-celled; *berry* 4 or 5-celled. (Name, in Greek signifying *inconspicuous*, from its humble growth.)



HÉDERA HELIX (*Common Ivy*).

1. HÉDERA (*Ivy*).

1. *H. Helix* (Common Ivy).—The only British species, too well known to need any description. (*See* "Forest Trees of Britain," vol. ii.)—Fl. Oct. Nov. Shrub.



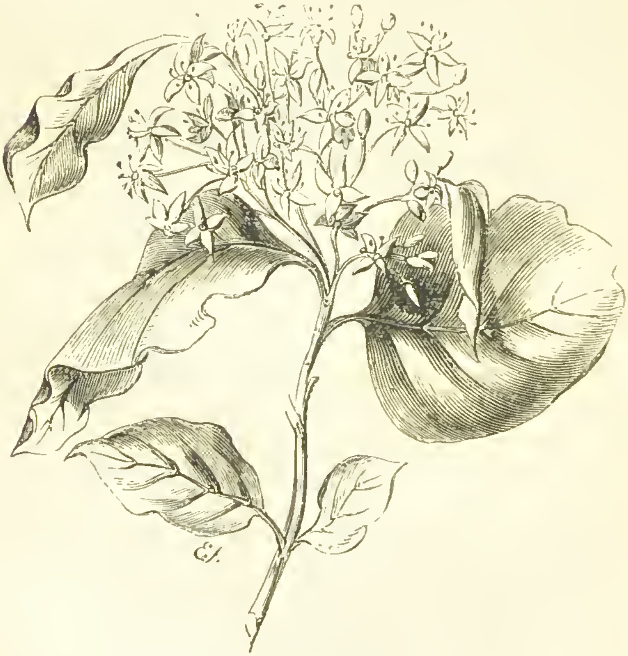
ADOXA MOSCHATELLINA (*Common Moschatell*).

2. ADOXA (*Moschatell*).

1. *A. Moschatéllina* (Common Moschatell).—The only species. A small herbaceous plant 4—6 inches high, growing in damp woods and hedge banks, and not unfrequent at a great elevation among the mountains. Each plant bears several delicate root-leaves, and two smaller leaves half-way up the stem. The *flowers* grow in terminal heads of 5 each, the upper flower with 4 *petals* and 8 *stamens*, the four side flowers having 5 *petals* and 10 *stamens* each; the latter are remarkable for being inserted in pairs, and for bearing 1-celled *anthers;* or the filaments may be considered to be forked, each fork bearing the lobe of an anther. The whole plant diffuses a musk-like scent, which, however, is not perceptible if the plant be bruised.—Fl. April, May. Perennial.

ORD. XL.—CORNACEÆ.—THE CORNEL TRIBE.

Sepals 4, attached to the ovary; *petals* 4, oblong, broad at the base, inserted into the top of the calyx; *stamens* 4, inserted with the petals; *ovary* 2-celled; *style* thread-like; *stigma* simple; *fruit* a berry-like drupe, with a 2-celled nut; *seeds* solitary.—Mostly trees or shrubs, with opposite leaves, and flowers growing in heads or umbels. A small order, containing few plants of interest, which inhabit the temperate regions of Europe, Asia, and America. In the United States several species are found, the bark of which is a powerful tonic, ranking in utility next to Peruvian bark. *Benthamia fragífera*, a handsome shrub from the mountains of Nepal, was introduced into England in 1825. In Cornwall, where it was first raised from seed, it flowers and bears fruit freely, and forms a pleasing addition to the shrubbery. Two species of *Cornus* are indigenous to Britain. The *Cornus* of the ancients was the present Cornelian Cherry, *Cornus máscula*, whose little clusters of yellow starry flowers are among the earliest heralds of spring. Its fruit is like a small plum, with a very austere flesh, but after keeping it becomes pleasantly acid. The Turks still use it in the manufacture of sherbet. A similar species is commonly cultivated in Japan for the sake of its fruit, which is a constant ingredient in the acid drinks of that country. The shrub now common in gardens under the name of spotted Laurel (*Aúcuba Japónica*) belongs to this order.

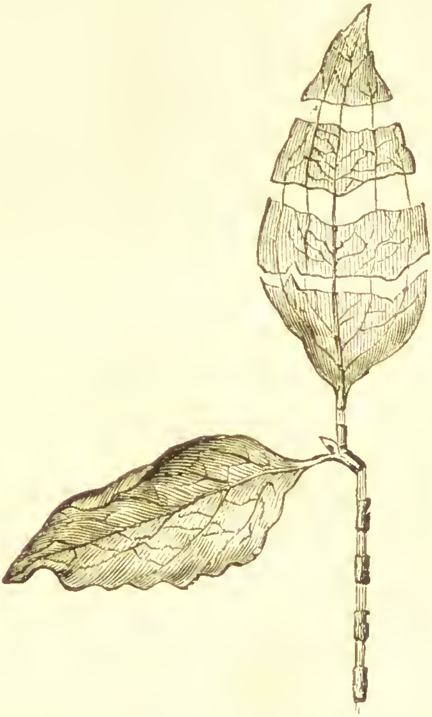


CORNUS SANGUÍNEA (*Wild Cornel, Dog-wood*).

1. Cornus (Cornel).—Characters described above. (Name, from the shrub so called by the Latins, from the horn-like nature of its wood.)

1. Cornus (*Cornel*).

1. *C. sanguínea* (Wild Cornel, Dog-wood).—Shrubby.—Hedges and thickets, especially on a chalk or limestone soil. A bushy shrub 5—6 feet high, with opposite, egg-shaped, pointed *leaves*, and terminal *cymes* of dull-white flowers. The bark on the old branches is of a reddish hue; the berries are small, and dark purple. The young shoots in spring, and the leaves at all seasons, are particularly well adapted for displaying the presence of spiral vessels in these parts, being numerous



YOUNG SHOOT OF THE WILD CORNEL.

and remarkably strong. The wood is much sought after by butchers for making skewers. The name Dog-wood is often given to the Spindle Tree (*Euónymus Europæus*), and Guelder Rose (*Viburnum Lantána*), trees which have wood of similar texture.—Fl. June. Shrub.

2. *C. Suécica* (Dwarf Cornel).—Herbaceous.—Mountainous pastures in Scotland and the north of England. Very different in habit from the last; *root* woody, creeping, and sending up annual flowering stems, which are about 6 inches high, and bear each an *umbel* of dark purple *flowers* with yellow *stamens*; at the base of each umbel are 4 egg-shaped yellow *bracts* tinged with purple. The fruit, which is red, is said by the Highlanders to create appetite, and hence is called *Lus-a-chraois*, plant of gluttony.—Fl. July, August. Perennial.

SUB-CLASS III.

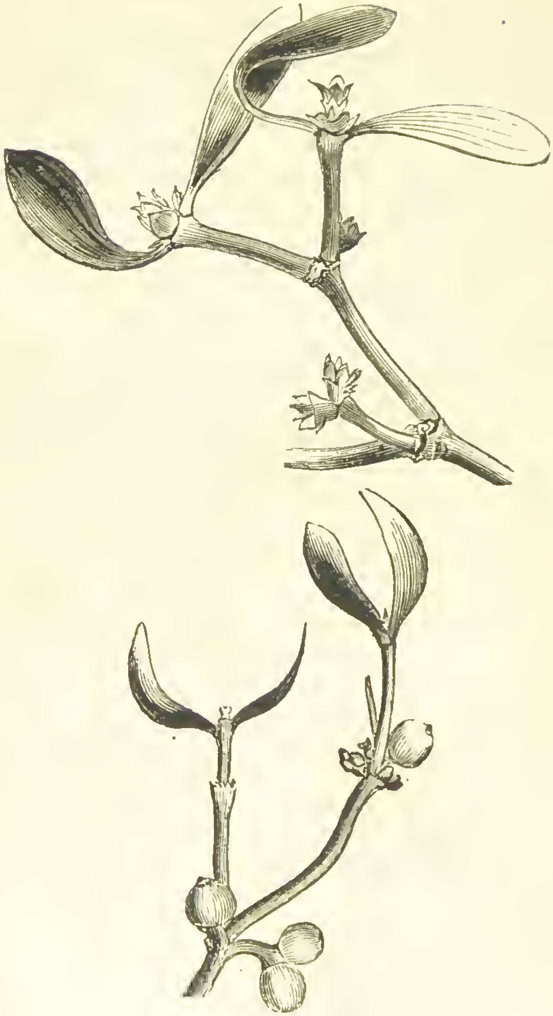
COROLLIFLORÆ.

Petals united, bearing the *stamens*.

ORD. XLI.—LORANTHACEÆ.—MISTLETOE TRIBE.

Stamens and *pistils* usually on different plants.—*Calyx* attached to the *ovary*, with 2 bracts at the base, sometimes almost wanting; *petals* 4—8, united at the base, expanding in a valve-like manner; *stamens* equalling the petals in number, and opposite to them: *ovary* 1-celled; *style* 1 or 0; *stigma* simple; *fruit* succulent, 1-celled, 1-seeded; *seed* germinating only when attached to some growing plant of a different species.—Shrubby plants of singular structure and habit, growing only (with rare exceptions) on the branches of other trees, and therefore true parasites. The leaves are usually in pairs, fleshy, and without veins: the flowers inconspicuous; but this is not always the case, for one species, *Nuytsia floribunda*, which grows in the neighbourhood of King George's Sound, bears an abundance of bright orange-coloured flowers, producing an appearance which the colonists compare to a tree on fire, and hence they call it the *Fire-tree.* This species is not a parasite, but the greater part of the tribe refuse to grow except on living vegetables. The seed of most species is coated with a viscid substance, by which it adheres to the bark, and which in a few days becomes a transparent glue. Soon, a thread-like radicle is sent forth, which, from whatever part of the seed it proceeds, curves towards the supporting tree, and becomes flattened at the extremity like the proboscis of a fly. Finally, it pierces the bark, and roots itself in the growing wood, having the power of selecting and appropriating to its own use such juices as are fitted for its sustenance. Though not themselves furnished with milky juices, they sometimes attach themselves to plants of that description, and extract only such nutriment as they require. The wood of the Common Mistletoe has been found to contain twice as much potash, and five times as much phosphoric acid, as the wood of the foster tree. Great virtues were attributed to the Mistletoe by the Druids, but at present its medicinal properties are in no repute. The Mistletoe may readily be propagated by attaching the fresh seeds to the smooth bark of an Apple or other tree. A species of *Loranthus* is used in Chili as a dye, but with this exception there are scarcely any which possess useful properties. About 400 species have been discovered, which inhabit principally the tropical regions of Asia and America.

1. Viscum (Mistletoe).—*Stamens* and *pistils* on separate plants; *Barren flower, calyx* 0; *petals* 4, fleshy, united at the base, each bearing an anther; *Fertile flower, calyx* a mere rim; *petals* 4, very small; *stigma* sessile; *berry* 1-seeded, crowned by the calyx. (Name, the Latin name of the plant, derived, it is said, from the Celtic *gwid*, the shrub, as being the most sacred of plants.)



VISCUM ALBUM (*Common Mistletoe*).

1. VISCUM (*Mistletoe*).

1. *V. album* (Common Mistletoe).—The only British species. Growing on a great variety of trees, especially

the Apple, exceedingly rare on the Oak. The stem is green and smooth, separating easily when dead into bone-like joints; the leaves are thick and leathery, of a yellow hue, the whole plant being most conspicuous in winter, when its white berries ripen.—Fl. March—May. Perennial.

ORD. XLII.—CAPRIFOLIACEÆ.—THE WOODBINE TRIBE.

Calyx attached to the ovary, usually with *bracts* at the base; *corolla* regular or irregular, 4—5-cleft; *stamens* equal in number to the lobes of the corolla and alternate with them; *ovary* 3—5-celled; *stigmas* 1—3; *fruit* usually fleshy, crowned by the calyx.—This tribe comprises shrubs and herbaceous plants of very different habits, and is interesting from containing the fragrant Honeysuckle or Woodbine, and the elegant little plant which Linnæus fixed on to commemorate his name. They are principally confined to the northern hemisphere, and among them, several are natives of Britain, which will be found described at length in "Forest Trees of Britain," vol. ii. The common Elder was formerly held in high repute for its medicinal properties; and preparations of the leaves, flowers, and fruit are still used as medicine in rural districts. The roasted berries of *Triósteum perfoliatum* have been used as a substitute for coffee. *Leycestéria formósa*, a beautiful shrub from the mountains of Nepal, where it flowers at an elevation of from 6,000 to 8,000 feet, is now becoming a common ornament in our gardens. It is most attractive when in a flowering state, from the contrast of the deep green hue of its stem and leaves with the purple colour of its floral leaves and berries.

1. SAMBÚCUS (Elder).—*Calyx* 5-cleft; *corolla* wheel-shaped, 5-lobed; *stamens* 5; *stigmas* 3, sessile; *berry* 3—4-seeded. (Name from the Greek, *sambúké*, a musical

wind-instrument, in making which the wood was anciently employed.)

2. VIBURNUM (Guelder Rose).—*Calyx* 5-cleft; *corolla* funnel-shaped, 5-lobed; *stamens* 5; *stigmas* 3, sessile; *berry* 1-seeded. (Name, the Latin name of the plant.)

3. LONICÉRA (Honeysuckle).—*Calyx* small, 5-toothed; *corolla* tubular, irregularly 5-cleft; *stamens* 5; *style* thread-shaped; *stigma* knobbed; *berry* 1—3-celled, with several cells. (Named in honour of Adam Lonicer, a German botanist.)

4. LINNÆA.—*Calyx* 5-cleft; *corolla* bell-shaped, 5-cleft, regular; *stamens* 4, two longer; *fruit* dry; 3-celled, one cell only containing a single seed.

1. SAMBÚCUS (*Elder*).

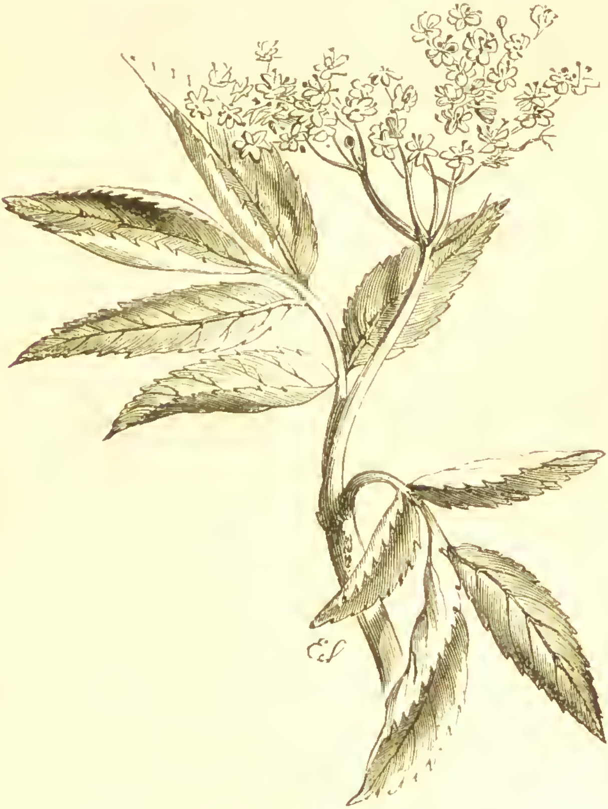
1. *S. nigra* (Common Elder).—*Stem* woody; *cymes* with 5 principal branches.—A small tree, abundant in most places. Remarkable for the large quantity of pith contained in the young branches, and for the elasticity of its wood. The *leaves* are pinnate, of a strong and unpleasant odour; the *flowers* white and of a sickly smell; the *fruit* dark purple, or rarely white.—Evelyn, speaking in its praise, says: "If the medicinal properties of the leaves, bark, berries, &c., were thoroughly known, I cannot tell what our countrymen could ail for which he would not find a remedy from every hedge, either for sickness or wound."—Fl. June. Tree.

* A smaller species (*S. Ébulus*), Dwarf Elder, is occasionally found in bushy places, and differs from the preceding in having an herbaceous *stem* 2—3 feet high, narrower *leaves*, and 3-cleft *cymes*.

2. VIBURNUM (*Guelder Rose*).

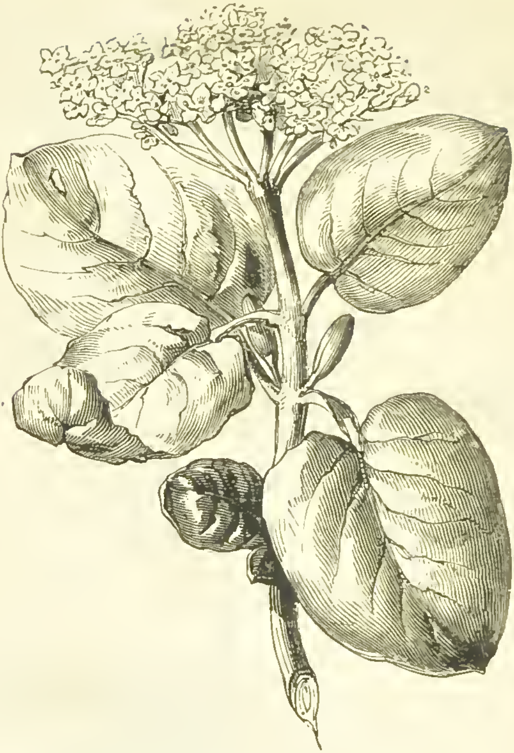
1. *V. Lantána* (Wayfaring-tree, Mealy Guelder-rose).—*Flowers* in cymes, all perfect: *leaves* elliptical, heart-shaped at the base, serrated, very downy beneath.—

A large shrub, with white, mealy, flexible branches, and large leaves, which are very hoary beneath. The flowers are dull white and grow in terminal *cymes;* the berries are scarlet, turning black when fully ripe.—It is most frequently met with in a chalky or limestone soil.—Fl. May, June. Shrub.



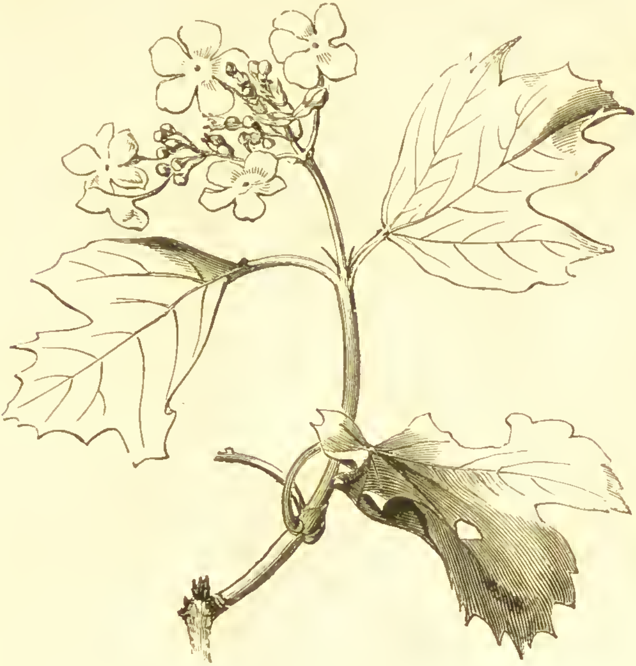
SAMBŪCUS NIGRA (*Common Elder*).

2. *V. Ópulus* (Guelder-rose, Water Elder).—*Flowers* in cymes, the outer barren and radiant; *leaves* smooth,



VIBURNUM LANTÀNA (*Wayfaring-tree, Mealy Guelder-rose*).

lobed, and cut; *leaf-stalks* with glands at the upper extremity.—Moist woods and hedges, not uncommon. Forming a shrub or small tree, with conspicuous snow-white flowers; the leaves assume a rich purple hue before falling, when they are very ornamental, as are also the bunches of coral-red berries, which it is said are sometimes fermented and eaten. This statement, however, seems scarcely credible to any one who has chanced to smell them. The bark is very acrid. In the wild plant the cyme is flat, the outer flowers being large and showy, but destitute of stamens and pistils; in the garden variety, called the Snow-ball tree, the cyme is composed entirely of barren flowers collected into a globular form.—Fl. June, July. Shrub, or small tree.

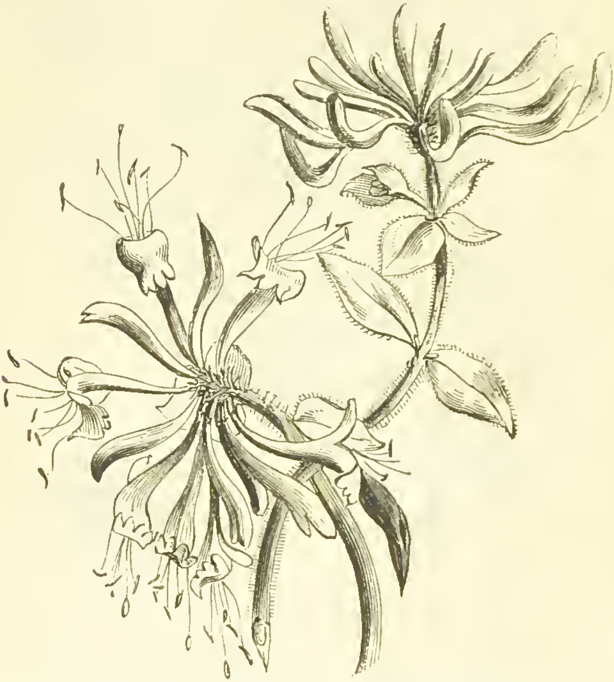


VIBURNUM ÓPULUS (*Guelder-rose, Water Elder*).

3. LONICÉRA (*Honeysuckle*).

1. *L. Periclýmenum* (Honeysuckle, Woodbine).—*Stem* twining; *flowers* gaping, in terminal heads; *leaves* all distinct (not united at the base).—A common and favourite twining shrub, the first to expand its leaves in

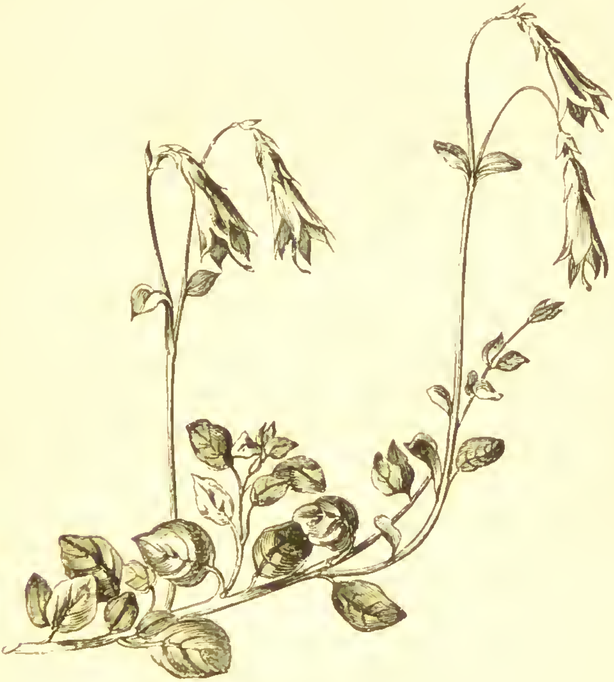
spring, or rather in winter, and almost the last to blossom in autumn. Though highly ornamental to our woods, it is decidedly injurious to young trees, clasping them so tightly, as to mark the rind with a spiral line, and finally becoming embedded in the wood. Handsome twisted walking-sticks are thus formed, but the growth of the tree is greatly checked. The leaves are not unfrequently lobed like those of the oak.—Fl. July, and again in October. Shrub.



LONICÉRA PERICLYMENUM (*Honeysuckle, Woodbine*).

* Two other species of Honeysuckle are occasionally found, but are not considered natives of Britain. *L.*

perfoliatum (Pale perfoliate Honeysuckle), which is distinguished by having the uppermost pair of *leaves connate*, or united by their bases; and *L. Xylósteum* (Upright Fly Honeysuckle), an erect shrub, with downy *leaves*, and pale-yellow, scentless *flowers*, which grow in pairs.



LINNÆA BOREALIS (*Linnæa*).

4. LINNÆA.

L. Boreális (Linnæa).—The only species. Deservedly regarded with peculiar interest as being the "little northern plant, long overlooked, depressed, abject, flowering early," which Linnæus himself selected as therefore most appropriate to transmit his name to posterity.—It grows in woods especially of Fir, in Scotland and in one English station, namely, a plantation of Scotch Firs in the parish of Hartburn, Northumberland. The *stem* trails along the ground, and bears at intervals pairs of roundish, slightly crenate *leaves*. The flowering *stalks* are erect, and bear each two pendulous bell-shaped *flowers*, which are fragrant and of a delicate pink colour.—Fl. June, July. Perennial.

ORD. XLIII.—RUBIACEÆ.—THE MADDER TRIBE.

Calyx 4—6-lobed, or wanting; *corolla* 4—6-lobed, wheel-shaped or tubular, regular; *stamens* equal in number to the lobes of the corolla, and alternate with them; *ovary* 2-celled; *style* 2-cleft; *stigmas* 2; *pericarp* 2-celled, 2-seeded. This order, taken in its widest extension, is one of the largest with which we are acquainted, containing more than 2,800 species, of which some are of the highest utility to man, both as food and medicine. Among the former, *Coffea Arábica* holds the first place. The seeds of this tree furnish the coffee of commerce. Several species of *Cinchóna*, a South American family, furnish Peruvian Bark and Quinine; and drugs of similar properties are obtained from other plants of the same tribe. Ipecacuanha is the powdered root of a small plant which grows in damp, shady forests in Brazil. The wood of another plant of this tribe, *Evosmia corymbósa*, is so poisonous, that Indians have been poisoned by eating meat roasted on spits made of it. Not a few, moreover, are noted for the fragrance and beauty of their flowers. All the above mentioned are natives of hot climates: the British species are very different, both in habit and properties. They are herbaceous plants, with slender angular stems, whorled leaves, and small flowers, possessing no remarkable properties, except that of containing a colouring matter in their roots, which is used as a dye. This group has been separated by some botanists, and made to constitute a distinct order, under the name of STELLÁTÆ, a name particularly appropriate to them, from the *star-like* arrangement of their leaves. The most important of all of these is *Rúbia tinctoria*, the roots of which afford Madder, a valuable dye, and possess the singular property of imparting a red colour to the bones of animals which feed on them. Other species of Rubia, growing in Bengal and China, are also used as a dye. No British species are of any great value, though it is said that the seeds of *Gálium*, when roasted, are a good substitute for coffee, and the flowers of *Gálium verum* are used as rennet to curdle milk. The most attractive British species is Woodruff, well known for the fragrance of its leaves when dry.

1. RÚBIA (Madder).—*Corolla* wheel-shaped, or bell-shaped ; *stamens* 4 ; *fruit* a 2-lobed berry. (Name, from the Latin *ruber*, red, from the dye of that colour afforded by some species.)

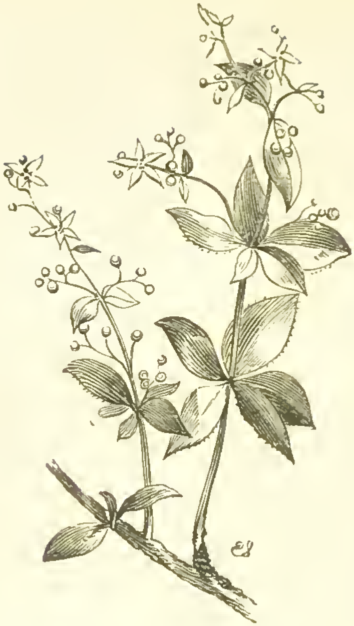
2. GÁLIUM (Bed-straw). — *Corolla* wheel-shaped ; *stamens* 4 ; *fruit* dry, 2-lobed, 2-seeded, not crowned by the calyx. (Name, from the Greek *gala*, milk, for curdling which some species are used.)

3. ASPÉRULA (Woodruff).—*Corolla* funnel-shaped ; *stamens* 4 ; *fruit* dry, 2-lobed, 2-seeded, not crowned by the calyx. (Name, from the Latin *asper*, rough, from the roughness of the leaves of some species.)

4. SHERARDIA (Field-Madder). — *Corolla* funnel-shaped ; *stamens* 4 ; *fruit* dry, 2-lobed, 2-seeded, crowned by the calyx. (Named in honour of James Sherard, an eminent English botanist.)

1. RÚBIA (*Madder*).

1. *R. peregrína* (Wild-Madder).—The only British species, common in bushy places in the south-west of England. A long straggling plant, many feet in length, with remarkably rough *stems* and *leaves*, the latter



RUBIA PEREGRÍNA (*Wild-Madder*).

growing in whorls of 4—6, glossy above, and recurved at the margin. The *flowers* are green, 5-cleft, and grow in panicles ; the *berries* remain attached to the plant until late in winter ; they are black, and about as large as currants.—Fl. June—August. Perennial.

2. Galium (*Bed-straw*).

* *Flowers yellow.*

1. *G. cruciátum* (Cross-wort).—*Leaves* 4 in a whorl, soft and downy ; *flowers* clustered in the whorls, *upper* ones having pistils only, *lower*, stamens only.—Bushy hedges, common ; well distinguished by its uniform leaves, and short clusters of dull yellow flowers. The

stems are scarcely branched, 1—2 feet long.—Fl. May, June. Perennial.

2. *G. verum* (Yellow Bed-straw).—*Leaves* about 8 in a whorl, very narrow (almost thread-like), grooved and often downy below.—Dry banks, especially near the sea, where it forms a conspicuous object with its dense panicles of golden-yellow flowers. The Highlanders use the roots, in conjunction with alum, to dye red, and the rest of the plant as rennet to curdle milk.—Fl. July, August. Perennial.

** *Flowers white.*

† *Fruit smooth.*

3. *G. Mollúgo* (Hedge Bed-straw).—*Leaves* 8 in a whorl, oblong, tapering at each end, with a bristly point, roughish at the edge; *flowers* in a loose, spreading panicle.—Common everywhere in England, but said to be less frequent in Scotland. This and *G. Aparíné* are the most abundant species, and resemble one another in having long straggling stems; *G. Aparíné* has the prickles pointing backwards, and clings to the dress when touched, but in the present species, the prickles on the edges of the leaves are weak and point forwards. —Fl. July, August. Perennial.

4. *G. palustré* (Water Bed-straw).—*Leaves* 4—6 in a whorl, oblong, blunt, tapering at the base; *stem* weak, straggling, more or less rough; *flowers* in loose, spreading panicles.—Watery places, common. Variable in size and roughness; likely to be confounded with the following, from which it differs in its superior size and blunt leaves, which are frequently unequal in length, especially in the upper whorls.—Fl. July, August. Perennial.

5. *G. uliginósum* (Rough Marsh Bed-straw).—*Leaves* 6—8 in a whorl, narrow, tapering at both ends, bristle-pointed, their edges as well as the angles of the *stem* rough with prickles, which point backwards.—Watery

places, common. Smaller than the last, the stem being rarely more than a foot high, slender and brittle; panicles of few flowers.—Fl. July, August. Perennial.

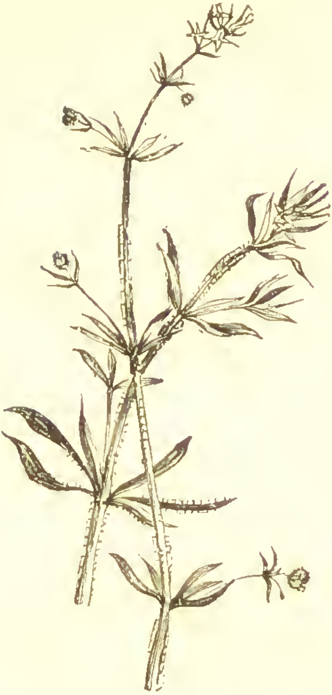
6. *G. saxátilé* (Heath Bed-straw).—*Leaves* about 6 in a whorl, inversely egg-shaped, pointed; *stem* much branched, smooth, prostrate below.—Heathy places, abundant. A small species, with numerous dense panicles of white flowers. The edges of the leaves are sometimes fringed with a few prickles, which point forwards. This and *G. verum* are the only British species which can be called ornamental.—Fl. June—August. Perennial.

* Besides the above, seven or eight other species belonging to this group have been described by British botanists; they are, however, of rare occurrence, with the exception of *G. tricorné,* which is tolerably common in some of the English counties, and in the Isle of Wight. The *stems* of this species are about a foot long, and rough, as well as the leaves, with prickles pointing backwards; the *flowers* grow in threes, and the *fruit* is reflexed.

†† *Fruit rough.*

7. *G. Aparíné* (Goose Grass, Cleavers).—*Leaves* 6—8 in a whorl, very rough with prickles pointing backwards; *flowers* 2—3 together, axillary; *fruit* rough with hooked prickles.—Hedges, exceedingly common. Well distinguished by its rough stems and leaves, which cling to the fingers when touched. The globular seed-vessels are also very tenacious, and disperse themselves by clinging to the coat of any animal that touches them; hence they derive their popular name of cleavers. The whole plant, when green, is greedily devoured by geese. The seeds, it is said, have been used as a substitute for Coffee.—Fl. June—August. Annual.

8. *G. boreálé* (Cross-leaved Bed-straw).—*Leaves* 4 in a whorl, 3-nerved, smooth; *stem* erect; *fruit* rough with hooked prickles.—Damp rocky places in the North.

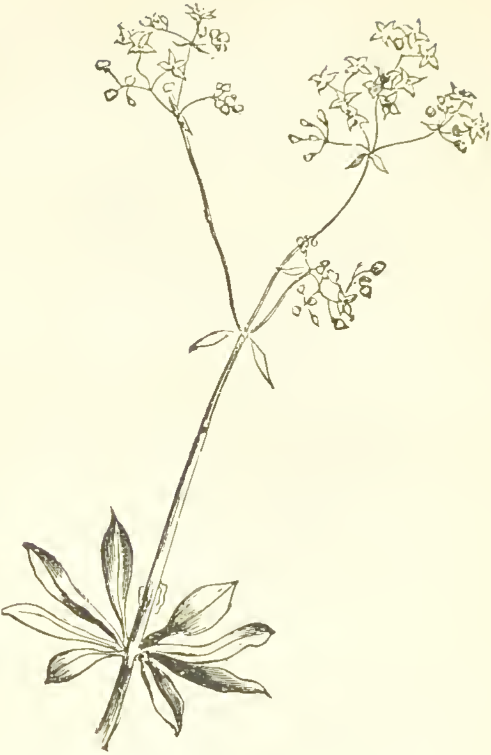


GÁLIUM APARÍNÉ (*Goose-Grass*).

Well distinguished by its cruciform, smooth leaves, and prickly fruit.—Fl. July, August. Perennial.

3. Aspérula (*Woodruff*).

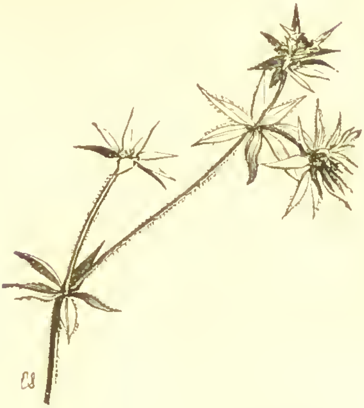
1. *A. odoráta* (Sweet Woodruff).—*Leaves* about 8 in a whorl; *flowers* in stalked, terminal panicles; *fruit* rough with bristles.—Moist woods, common. A deservedly favourite plant, not so much for its regularly whorled, bright green leaves and pretty snow-white flowers, as for its agreeable perfume when dry, which resembles that of new hay. When it is desired to preserve the leaves merely for their scent, the stem should



ASPÉRULA ODORATA (*Sweet Woodruff*).

be cut through just above and below a joint, and the leaves pressed in such a way as not to destroy their star-like arrangement.—Fl. May, June. Perennial.

2. *A. Cynánchica* (Squinancy-wort).—*Leaves* 4 in a whorl, linear, uppermost very unequal.—Dry pastures, especially on a chalky or limestone soil, not common. A small plant, with very narrow leaves, and tufts of lilac or whitish flowers. It derives its name from having been formerly used as a remedy for the squinancy, or quinsy.—Fl. June, July. Perennial.



SHERARDIA ARVENSIS (*Field Madder*).

4. SHERARDIA (*Field Madder*).

1. *S. arvensis* (Field Madder). A small plant, with branched spreading *stems*, narrow, pointed *leaves*, in whorls of about 6 each, and minute bluish pink *flowers*, which form a small umbel in the bosom of the terminal leaves.—Abundant in cultivated land.—Fl. June—August. Annual.

ORD. XLIV.—VALERIANACEÆ.—THE VALERIAN TRIBE.

Calyx superior, finally becoming a border, or pappus, to the fruit; *corolla* tubular, 3—6-lobed, sometimes irregular and spurred at the base; *stamens* 1—5, inserted into the tube of the corolla; *ovary* with 1—3 cells; *fruit* dry, crowned with the calyx, not bursting, 1-seeded, two of the cells being empty.—Herbaceous plants, with opposite leaves, often strong-scented or aromatic, inhabiting temperate countries, especially the north of India, Europe, and South America. Many of the plants in this order possess properties worthy of notice, but by far the most remarkable is *Valeriana Jatamansi*, the Spikenard of Scripture, and the *Nardus* of the ancient classical authors. It grows on the hills of Butan, in India, where it is called *Dshatamansi.* The root leaves, shooting up from the ground, and surrounding the young stem, are torn up, along with a part of the root, and having been dried in the sun, or by artificial heat, are sold as a drug. Two merchants of Butan, of whom Sir W. Jones caused inquiries to be made, related. that the plant shoots up straight from the earth, and that it is then, as to colour, like a green ear of wheat; that its fragrance is pleasant, even while it is green, but that its odorous quality is much strengthened by merely drying the plant; that it grows in Butan on hills, and even on plains in many places; and that in that country it is gathered and prepared for medicinal purposes. In ancient times, this drug was conveyed by way of Arabia to southern Asia, and thus it reached the Hebrews. Judas valued the box of ointment with which Mary anointed our blessed Lord's feet at two hundred denarii (6*l.* 9*s.* 2*d.*). By the Romans, it was considered so precious, that the poet Horace promises to Virgil a whole *cadus*, or about three dozen modern bottles of wine, for a small onyx-box full of spikenard. It was a Roman custom, in festive banquets, not only to crown the guests with flowers, but also to anoint them with spikenard. Eastern nations procure from the mountains of Austria the *Valeriana Céltica* and *V. Saliunca* to perfume their baths. Their roots are grubbed up with danger and difficulty by the peasants of Styria and Carinthia, from rocks on the borders of eternal snow; they are then tied in bundles, and sold at a very low price to merchants. who send them by way of Trieste to Turkey and Egypt, where they are retailed at a great profit, and passed onwards to the nations of India and Ethiopia. The seeds of *Centranthus ruber* (Red Valerian) were used in former times in the process of embalming the dead:

and some, thus employed in the 12th century, on being removed from the cere-cloth in the present century and planted, have vegetated. The roots of our common Valerian, *V. officinális,* are still used in medicine; their effect on cats is very remarkable, producing a kind of intoxication. The young leaves of *Fédia olitoria* (Lamb's Lettuce) are eaten as salad, and those of *Centranthus ruber* (Red Valerian) are, in Sicily, eaten in the same way.

1. CENTRANTHUS (Spur Valerian).—*Corolla* 5-cleft, spurred at the base; *stamen* 1; *fruit* crowned with a feathery pappus. (Name in Greek denoting "Spur-flower.")

2. VALERIÁNA (Valerian).—*Corolla* 5-cleft, bulged at the base; *stamens* 3; *fruit* crowned with a feathery pappus. (Name from the Latin *valeo*, to be powerful, on account of its medicinal virtues.)

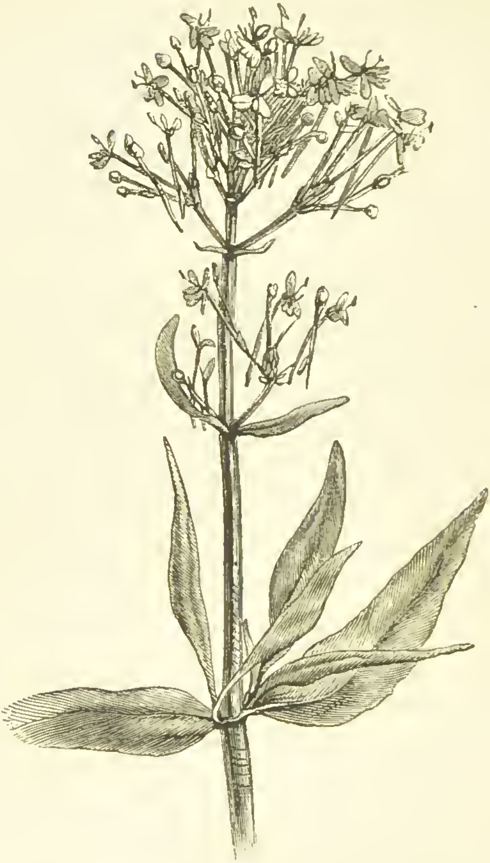
3. FÉDIA (Corn-salad).—*Corolla* 5-cleft, bulged at the base; *stamens* 3; *fruit* crowned with the calyx. (Name of uncertain origin.)

1. CENTRANTHUS (*Spur Valerian*).

1. *C. ruber* (Red Spur Valerian).—*Corolla* spurred at the base; *stamen* 1; *leaves* egg-shaped, pointed. Not a native plant, but nevertheless very common in limestone quarries and chalk-pits, as well as on old garden walls. The stems are 1—2 feet high; the leaves large, smooth, and glaucous; the flowers are deep red, and grow in terminal bunches. A white variety is not uncommon. —Fl. June—September. Perennial.

2. VALERIÁNA (*Valerian*).

1. *V. dioíca* (Small Marsh Valerian).—*Stamens* and *pistils* on different plants: *corolla* bulged at the base; *stamens* 3; *root leaves* egg-shaped, stalked; *stem leaves* pinnatifid, with a large terminal lobe.—Marshy ground, not unfrequent. Growing about a foot high, quite erect,



CENTRANTHUS RUBER (*Red Spur Valerian*).

and unbranched, with a terminal corymb of light pink flowers. The flowers which bear stamens are the largest.—Fl. May. Perennial.

2. *V. officinális* (Great Wild Valerian).—*Corolla* bulged at the base; *stamens* 3; *leaves* pinnate.—Much taller and stouter than the last, but resembling it in habit, as well as in the colour and smell of the flowers. This is the species of which the roots are used in medi-

cine, and of which cats are so fond; rats also are said to be attracted by their smell.—Fl. June, July. Perennial.

FÉDIA OLITÓRIA (*Common Corn Salad, Lamb's Lettuce*).

3. Fédia (*Corn Salad*).

1. *F. olitória* (Common Corn Salad, Lamb's Lettuce). —*Leaves* long and narrow, wider towards the end, a little toothed near the base: *flowers* in leafy heads; *capsule* inflated, crowned by the 3 calyx teeth.—Cultivated ground, abundant. A small plant 4—8 inches high, with tender bright green leaves, stems repeatedly 2-forked, and terminal leafy heads of very minute flowers, which resemble white glass. It is sometimes cultivated as a salad.—Fl. May, June. Annual.

2. *F. dentáta* (Toothed Corn-salad).—*Leaves* long and narrow, much toothed towards the base; *flowers* in corymbs, with a solitary sessile one in the forks of the stem; *capsule* not inflated, crowned by the 4-toothed calyx.—Cultivated ground, common in the West of England, but not general elsewhere. Taller than the last, and of a more rigid habit.—Fl. June, July. Annual.

* Two or three other species of *Fédia* have been described by British botanists; these are of rare occurrence, and differ slightly from the preceding, principally in the form of the fruit.

ORD. XLV.—DIPSACEÆ.—THE TEASEL TRIBE.

Calyx attached to the ovary, surrounded by several more or less rigid, calyx-like bracts; *corolla* tubular, with 4—5 unequal lobes; *stamens* 4, the anthers not united; *style* 1; *stigma* not cleft; *fruit* dry, 1-seeded, crowned by the pappus-like calyx; *flowers* in heads.—Herbaceous plants, inhabiting temperate regions, and possessing no remarkable properties. *Dípsacus Fullónum* is the Clothiers' Teasel, a plant with large heads of flowers, which are embedded in stiff, hooked bracts. These heads are set in frames and used in the dressing of broad-cloth, the hooks catching up and removing all loose particles of wool, but giving way when held fast by the substance of the cloth. This is almost the only process in the manufacture of cloth which it has been found impossible to execute by machinery; for although various substitutes have been proposed, none has proved, on trial, exactly to answer the purpose intended.

1. DÍPSACUS (Teasel).—*Heads* with numerous general bracts at the base; *outer calyx* forming a thickened margin to the fruit; *inner*, cup-shaped, entire; *receptacle* bristling with rigid awns; *fruit* with four sides. (Name: the leaves are united at their base, so as to

form, round the stem, a hollow, in which water collects; hence the plant was called *dípsacus*, or thirsty, from the Greek *dipsao*, to thirst.)

2. SCABIÓSA (Scabious).—*Heads* with numerous general bracts at the base; *outer calyx* membranaceous and plaited; *inner* of 5 bristles; *receptacle* scaly; *fruit* nearly cylindrical. (Name, from the Latin *scabies*, the leprosy, for which disease some of the species were supposed to be a remedy.)

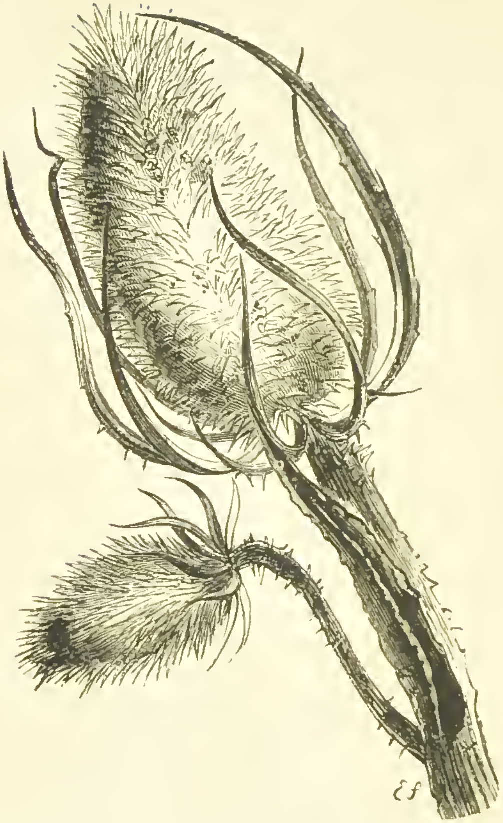
3. KNAUTIA (Field Scabious).—*Heads* with numerous general bracts at the base; *outer calyx* minute, with 4 small teeth; *inner* cup-shaped; *receptacle* hairy; *fruit* 4-sided. (Name in honour of Christopher Knaut, a Saxon botanist.)

1. DÍPSACUS (*Teasel*).

1. *D. sylvestris* (Wild Teasel).—*Leaves* opposite, united at the base, and forming a cup; *bristles* of the receptacle not hooked.—Waste places, common. A stout herbaceous plant, 3—6 feet high, with an erect prickly stem, large bright green leaves, which are prickly underneath and united at the base, and often contain water. The flowers grow in large, conical, bristly heads, the terminal bristles being generally the longest. The flowers themselves are light purple, and expand in irregular patches on the head.—Fl. July. Biennial.

2. *D. pilósus* (Small Teasel).—*Leaves* stalked, with a small leaflet at the base on each side.—Moist shady places, not common. Smaller than the last in all its parts, and having more the habit of a Scabious than of a Teazel. The flowers are white, and grow in small, nearly globose, bristly heads; the whole plant is rough with bristles.—Fl. August, September. Biennial.

* *D. Fullónum* (Fullers' Teasel) differs from *D. sylvestris* in having the *bristles* of the *receptacle* hooked; it is not considered a British plant, though occasionally found wild in the neighbourhood of the cloth districts,

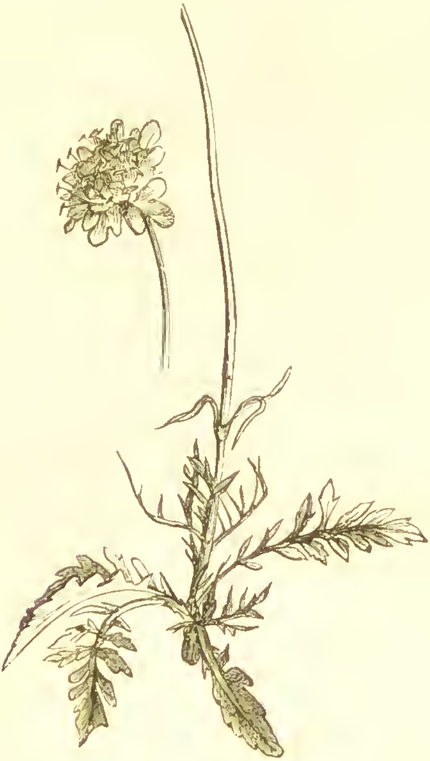


DIPSACUS SYLVESTRIS (*Wild Teasel*).

2. Scabiósa (*Scabious*).

1. *S. succísa* (Premorse Scabious).—*Corolla* 4-cleft, nearly regular; *heads* nearly globose; *leaves* oblong, entire.—Heaths and pastures, common. A slender, little-branched plant, with a hairy stem, few leaves, and terminal heads of purplish blue flowers. The root is solid

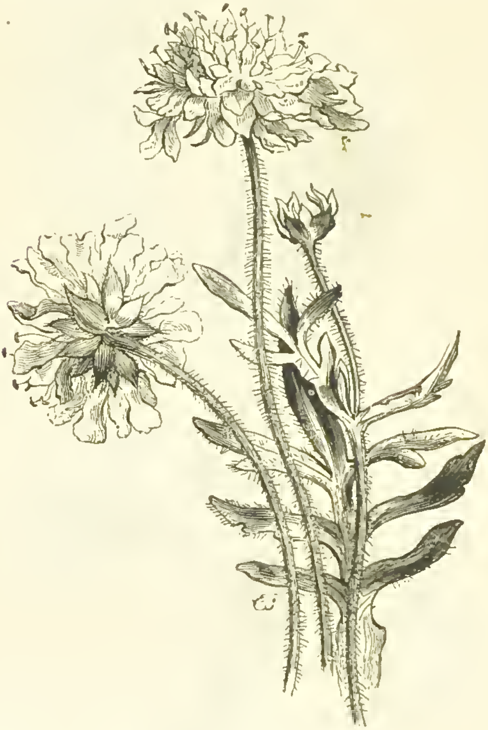
and abrupt, as if bitten off (premorse).—Fl. July—October. Perennial.



SCABIÓSA COLUMBÁRIA (*Small Scabious*).

2. *S. Columbária* (Small Scabious).—*Corolla* 5-cleft, the outer flowers longest; *heads* nearly globose; *root leaves* oblong, variously cut; *upper* pinnatifid.—Pastures

on a chalky soil, not uncommon. Well distinguished from the last by its radiate flowers and cut leaves. The foliage is of a much lighter hue, and the flowers lilac rather than purple.—Fl. July, August. Perennial.



KNAUTIA ARVENSIS (*Field Scabious*).

3. KNAUTIA (*Field Scabious*).

1. *K. arvensis* (Field Scabious).—*Root leaves* simple; *upper* pinnatifid; *inner calyx* with a fringe of 8—16 teeth; *heads* convex.—Corn-fields and way-sides, common. A tall bristly plant, 2—3 feet high, not much

branched, bearing several large handsome heads of lilac flowers, of which the inner are regularly cleft, the outer larger, and generally, though not always, radiate. It is sometimes called *Scabiósa arvensis.* — Fl. July, August. Perennial.

Ord. XLVI.—COMPÓSITÆ.—Compound Flowers.

This extensive and well-marked Order derives its name from having its flowers *compounded,* as it were, of numerous smaller ones called *florets,* which are inclosed within a calyx-like assemblage of *bracts,* termed an *involucre.* These bracts, usually called *scales,* often overlap one another like the tiles of a house (*imbrex*); hence they are said to be *imbricated.* The flowers vary greatly in shape, but the following description will be found to include all the British species. *Calyx* rising from the top of the ovary, and becoming a *pappus,* that is, either a chaffy margin of the fruit, or a tuft or ring of bristles, hairs, or feathery down; *corolla* of one petal, either tubular. or strap-shaped; *stamens* 5, united by their anthers (*syngenesious*); *ovary* inferior, 1 to each style, 1-celled; *style* simple, with a simple or 2-cleft *stigma,* sheathed by the tube of anthers; *fruit* a solitary erect seed, crowned by the *pappus,* which is sometimes merely a chaffy margin, but more frequently an assemblage of simple, or serrated or feathery hairs, sometimes elevated on a stalk. For convenience of reference, this Order is divided into several Groups: I. Cichoráceæ (*Chicory group*). In this, all the florets are strap-shaped and perfect; that is, each contains 5 stamens and a pistil. The prevailing colour of British species is yellow, as the Dandelion; but Salsafy (*Tragopógon porrifolius*) and Alpine Sow-Thistle (*Sonchus alpínus*) have purple flowers; Chicory, blue. In II. Cynarocéphalæ (*Thistle Group*) the florets form a *convex* head, and are all tubular and perfect, except in *Centauréa,* where the outer florets, which are larger than the inner, are destitute both of stamens and pistils; the stigma is jointed on the style. The flowers are purple, with a tendency to vary into white; but in Carline-Thistle (*Carlína*) they are brownish yellow; in Corn-flower (*Centauréa Cýanus*) bright blue. In III. TUBIFLÓRÆ (*Tansy Group*) all the *florets* are tubular and perfect, and form a *flat* head; the *style* passes into the stigma without a joint; the *flowers* are mostly yellow; but Hemp-Agrimony (*Eupatórium cannábinum*) has lilac flowers; Butter-bur (*Petasítes vulgáris*) pale flesh-coloured, and in most species of *Artemísia*, *Gnaphálium*, and *Filágo*, the colour is determined rather by the involucre than the florets. In IV. RADIÁTÆ (*Daisy Group*) the *florets* are of two kinds; those of the centre, or *disk*, being tubular and perfect, those of the margin, or *ray*, strap-shaped, and having pistils only. The prevailing colour of the disk is yellow, Yarrow (*Achilléa*) being the only exception, in which all the florets are white; the ray is either of the same colour, as in Colt's-foot (*Tussilágo*), Golden-rod (*Solidágo*), Rag-wort and Flea-wort (*Senécio*), Leopard's-Bane (*Dorónicum*), Elecampane (*Ínula*), Flea-bane (*Pulicaria*), Corn-Marigold (*Chrysánthemum ségetum*), and Ox-eye Chamomile (*Ánthemis tinctoria*); white, as in Daisy (*Bellis*), Feverfew and Mayweed (*Matricaria*), Ox-eye (*Chrysánthemum Leucánthemum*), and several species of Chamomile (*Ánthemis*); or purple, as in Starwort (*Aster*), and *Erígeron*. In Groundsel (*Senécio vulgáris*) the ray is never perfected.

The limits of the Order COMPÓSITÆ are exactly the same as those of the Linnean Class SYNGENESIA: but the number of plants belonging to it exceeds the amount of *all the plants known to Linnæus*, so extensive have been the researches in Botany since his time. According to Lindley, the number of *genera* alone amounts to 1,005; of *species* to 9,000; the whole number of plants known to Linnæus being but 8,500. It is supposed that the compound flowers constitute about one-tenth of all described plants; their properties vary considerably in different parts of the world, but not according to any known rule. The Chicory Group are, however, most abundant in cold regions, the Daisy Group in hot climates. Again, it may be remarked, that, in cold and temperate regions, the Compósitæ are mostly herbaceous; but as we approach the equator they become shrubs, or even trees. The variety of properties which they possess is not proportionate to the immense number of species. Bitterness, in a greater or less degree, is a characteristic of nearly all, to which is sometimes added astringency, and many possess tonic or narcotic properties. Chicory, or Succory, is cultivated as a salad, but more frequently for the sake of its roots, which are roasted and mixed with ground coffee. The flavour is agreeable, but it is to be feared that less palatable and, perhaps, not so wholesome roots, procurable at a less cost, are often substituted for it. From the leaves a blue dye may be obtained. Endive is another species of Chicory (*Cichórium Endivia*), the blanched leaves of which afford a common winter salad. The common Dandelion (a corruption of *Dent-de-lion*, "Lion's tooth,") supplies an extract which is said to have valuable medicinal properties; its roots are also used to adulterate coffee. Lettuces afford a wholesome salad, as well as an extract, the properties of which resemble those of opium. The roots of *Scorzonéra* and *Tragopógon porrifolius* (Cardoons) are esculent, but almost grown out of use. These all belong to the Chicory Group.

Among the Thistle Group we have the Artichoke (*Cýnara Scólymus*), the young involucres and receptacles of which are edible; the Burdock (*Arctium*), the root of which is said to be useful in rheumatism; and the Carline Thistle, which was anciently used in magical incantations. In the third Group, Wormwood (*Artemisia*) is remarkable for its intense bitterness. One species (*A. Abrótanum*) is the Southernwood of gardens, a fragrant shrub, used on the Continent in making beer; *A. Dracúnculus,* the Tarragon of gardeners, is used for giving an agreeable flavour to vinegar. Some species of *Eupatórium* have the reputed power of healing the bites of venomous animals; and *E. glutinosum* is said to be the plant which, under the name of Mático, is extensively used as a styptic. It is a shrubby plant, inhabiting the Andes, and derived its name from a soldier, nicknamed "Matico" (Little Matthew), who, having been wounded in battle, accidentally applied the leaves of this plant to his wound, which had the immediate effect of stopping the bleeding. To the RADIÁTÆ belong the gorgeous Dahlia, so called, from Dr. Dahl, who introduced it; and the "wee" Daisy, or Day's-eye, which opens only in sunny weather, and peeps up through the grass as if it were an eye indeed. The genus Helianthus contains the Sun-flower (*H. annuus*), and Jerusalem Artichoke (*H. tuberosus*); "Jerusalem" being a corruption of an Italian word (*girasole*) of the same meaning as Sun-flower, the name Artichoke being given to mark the similarity of flavour in its roots with that of the true Artichoke mentioned above. It rarely flowers in England, but produces abundance of tubers, which hold a high rank among esculent vegetables. It is valuable, not only for its productiveness, but for the freedom with which it grows in any soil. Its roots are sometimes made into a dish, which, by an absurd piece of pedantry, is called "Palestine soup." Chamomile and Feverfew possess valuable medicinal properties, especially the former. Coltsfoot and Elecampane are useful in pectoral complaints; the flowers of Marigold are used to adulterate saffron; the Ox-eye Daisy is said to be destructive to fleas; the yellow Ox-eye affords a yellow dye, and the petals of the Dahlia a beautiful carmine.

I. Cichoráceæ.—*Chicory Group.*

All the florets strap-shaped, having stamens and pistils.

II. Cynarocéphalæ.—*Thistle Group.*

All the florets tubular, 5-cleft, having stamens and pistils, (except in Centauréa, in which the outer florets are larger, and destitute of stamens and pistils,) *and forming a convex head; style jointed below the stigma.*

III. Tubiflóræ.—*Tansy Group.*

All the florets tubular, 5-cleft, having stamens and pistils, and forming a flat head; style not jointed below the stigma.

IV. Radiátæ.—*Daisy Group.*

Central florets tubular, 5-cleft, having stamens and pistils; outer florets strap-shaped, forming a ray, and furnished with pistils only. (*Senécio vulgáris*, Common Groundsel, has no rays.)

I. Cichoráceæ.—*Chicory Group.*

1. Tragopógon (Goat's-beard).—*Involucre* simple, of 8—10 long scales, united below; *receptacle* dotted; *fruit* rough, with longitudinal ridges, tapering into a long beak; *pappus* feathery, with the down interwoven, concave above. (Name in Greek signifying *a goat's beard.*)

2. Helminthia (Ox-tongue).—*Involucre* of about 8 equal scales, surrounded by 3—5 leaf-like, loose bracts; *receptacle* dotted; *fruit* rough with transverse wrinkles, rounded at the end and beaked; *pappus* feathery. (Name from the Greek *helmins, helminthos*, a worm, from the form of the fruit.)

3. Picris.—*Involucre* of 1 row of equal, upright scales, with several small spreading ones at the base; *receptacle* lightly dotted; *fruit* rough with transverse ridges, not beaked; *pappus* of two rows, the inner only feathery. (Name from the Greek *picros,* bitter.)

4. Apárgia (Hawk-bit).—*Involucre* unequally imbricated, with the outer scales smaller, black and hairy, in several rows; *receptacle* lightly dotted; *fruit* tapering to a point; *pappus* of 1 row, feathery. (Name of uncertain origin.)

5. Thrincia.—*Involucre* of 1 row, with a few scales at the base; *receptacle* lightly dotted; *fruit* of the outer florets scarcely beaked; *pappus* a chaffy fringed crown; *fruit* of the inner florets beaked; *pappus* feathery. (Name from the Greek *thrincos,* a battlement, from the form of the seed-crown of the marginal florets.)

6. Hypochæris (Cat's-ear).—*Involucre* oblong, imbricated; *receptacle* chaffy; *fruit* rough, often beaked; *pappus* feathery, often with a row of short bristles outside. (Name in Greek denoting its fitness for hogs.)

7. Lactúca (Lettuce).—*Involucre* oblong, imbricated, its scales membranous at the margin, containing but few flowers; *receptacle* naked; *fruit* flattened, beaked; *pappus* hairy. (Name from *lac,* milk, which the juice resembles in colour.)

8. Sonchus (Sow-thistle).—*Involucre* imbricated, with 2 or 3 rows of unequal scales, swollen at the base; *receptacle* naked; *fruit* flattened, transversely wrinkled, not beaked; *pappus* hairy. (Name in Greek, bearing allusion to the soft nature of the stems.)

9. Crepis (Hawk's-beard).—*Involucre* double, inner of 1 row, outer of short, loose scales; *receptacle* naked; *fruit* not flattened, furrowed, tapering upwards; *pappus,* a tuft of soft, white down. (Name in Greek signifying a *slipper,* but why given to this plant is not known.)

10. Hierácium (Hawk-weed).—*Involucre* imbricated, with numerous oblong scales; *receptacle* dotted; *fruit*

angular, furrowed, abrupt, with a toothed margin at the top; *pappus* bristly, sessile, not white. (Name from the Greek, *hierax*, a hawk, because that bird was supposed to use the plant to strengthen its sight.)

11. LEÓNTODON (Dandelion).—*Involucre* imbricated with numerous scales, the outermost of which are loose, and often reflexed; *receptacle* dotted; *fruit* slightly flattened, rough, bearing a long and very slender beak; *pappus* hairy. (Name from the Greek, *leon*, a lion, and *odous, odontos*, a tooth, from the tooth-like lobes of the leaves.)

12. LAPSÁNA (Nipple-wort).—*Involucre* a single row of erect scales, with 4—5 small ones at the base, containing but few flowers; *receptacle* naked; *fruit* flattened, furrowed; *pappus* 0. (Name of Greek origin.)

13. CICHORIUM (Chicory).—*Involucre* in 2 rows, inner of 8 scales, which bend back after flowering; outer of 5 smaller loose scales; *receptacle* naked, or slightly hairy; *fruit* thick above, tapering downwards; *pappus* a double row of small chaffy scales. (Name of Arabic origin.)

II. CYNAROCÉPHALÆ.—*Thistle Group.*

14. ARCTIUM (Burdock).—*Involucre* globose, scales ending in hooked points; *receptacle* chaffy; *fruit* oblong, 4-sided; *pappus* short. (Name from the Greek *arctos*, a bear, from the roughness of the heads of flowers.)

15. SERRÁTULA (Saw-wort).—*Stamens* and *pistils* on different plants; *involucre* imbricated, scales not prickly; *receptacle* chaffy or bristly; *fruit* flattened, not beaked; *pappus* hairy. (Name from the Latin *sérrula*, a little saw, the leaves being finely serrated.)

16. SAUSSÚREA.—*Involucre* imbricated, scales not prickly; *anthers* bristly at the base; *receptacle* chaffy; *pappus* double, outer bristly, inner longer, feathery. (Named in honour of the two *Saussures*, eminent botanists.)

17. CÁRDUUS (Thistle).—*Involucre* swollen below, imbricated with thorn-like scales; *receptacle* bristly; *pappus* hairy, united by a ring at the base, and soon falling off. (The Latin name of the plant.)

18. CNICUS (Plume-Thistle).—Resembling *Carduus,* except that the *pappus* is feathery. (Name from the Greek *cnizo,* to prick.)

19. ONOPORDUM (Cotton-Thistle).—*Receptacle* honeycombed; *fruit* 4-angled; *pappus* hairy, rough; in other respects resembling *Carduus.* (Name of Greek origin.)

20. CARLÍNA (Carline-Thistle).—Resembling *Cnicus,* except that the inner scales of the *involucre* are chaffy and coloured, and spread like a ray. (Name, the same as *Carolina,* from a tradition that the root of one species, *C. acaulis,* was shown by an angel to *Charlemagne* as a remedy for the plague which prevailed in his army.)

21. CENTAURÉA (Knapweed, Blue-bottle, &c.)—*Involucre* imbricated; *receptacle* bristly; *pappus* hairy, or 0; *outer florets* large, irregular, destitute of stamens and pistils. (Name from the *Centaur Chiron,* who is fabled to have healed wounds with it.)

III. TUBIFLÓRÆ.—*Tansy Group.*

22. BIDENS (Bur-Marigold).—*Fruit* crowned with 2 or 3 erect rigid bristles, which are rough with minute teeth pointing downwards. (Name from the Latin *bis,* double, and *dens,* a tooth, from the structure of the fruit.)

23. EUPATÓRIUM (Hemp-Agrimony). — *Heads* few flowered; *involucre* imbricated, oblong; *receptacle* naked; *styles* much longer them the florets. (Name from *Mithridátes Eúpator,* who is said to have brought the plant into use.)

24. CHRYSÓCOMA (Goldylocks).—*Involucre* a single row of loosely spreading scales; *receptacle* honey-combed;

fruit flattened, silky; *pappus* hairy, rough. (Name from the Greek *chrysos,* gold, and *comé,* hair.)

25. DIÓTIS (Cotton-weed).—*Pappus* 0; *corolla* with two ears at the base, which remain and crown the fruit. (Name from the Greek *dis,* double, and *ous, ótos,* an ear, from the structure of the fruit.)

26. TANACÉTUM (Tansy).—*Involucre* cup-shaped, imbricated; *receptacle* naked; *fruit* crowned with a chaffy border. (Name altered from the Greek *athánaton,* everlasting.)

27. ARTEMÍSIA (Wormwood).—*Pappus* 0; *involucre* roundish, imbricated, containing but few flowers. (Named after *Ártemis,* the Diana of the Greeks.)

28. ANTENNÁRIA (Everlasting).—*Stamens* and *pistils* on separate plants; *pappus* hairy, that of the barren flowers thickened or feathery upwards; *involucre* coloured, rigid. (Name from the antennæ of an insect, which the pappus of the barren flower resembles).

29. GNAPHÁLIUM (Cudweed).—*Involucre* roundish, dry, imbricated, often coloured; *receptacle* naked; *pappus* hairy. (Name from the Greek *gnaphálion,* soft down, with which the leaves are covered.)

30. FILÁGO.—*Involucre* tapering upwards, imbricated, of a few long pointed scales; *receptacle* chaffy in the circumference; *pappus* hairy; *florets* few, the outer ones bearing pistils only. (Name from the Latin *filum,* a thread, the whole plant being clothed with white thread-like hairs, or down.)

31. PETASÍTES (Butter-Bur).—*Involucre* a single row of narrow scales; *receptacle* naked; *barren* and *fertile* flowers mostly on different plants. (Name from the Greek *pétasos,* a covering for the head, from the large size of the leaves.)

IV. RADIÁTÆ.—*Daisy Group.*

32. TUSSILÁGO (Colt's-foot).—*Involucre* a single row of narrow scales; *receptacle* naked; *florets* of the ray

narrow, in several rows; of the disk few, all yellow. (Name from the Latin *tussis*, a cough, from the use to which it is applied.)

33. Erígeron (Flea-bane).—*Involucre* imbricated with narrow scales; *receptacle* naked; *florets* of the ray in many rows, very narrow, different in colour from those of the disk. (Name in Greek signifying *growing old at an early season*, from the early appearance of the grey seed-down.)

34. Aster (Starwort).—*Involucre* imbricated, a few scales on the flower-stalk; *receptacle* naked, honeycombed; *florets* of the ray in 1 row, purple; of the disk yellow; *pappus* hairy, in many rows. (Name from the Greek *aster*, a star.)

35. Solidágo (Golden-rod).—*Involucre* and *receptacle* as in Aster; *florets* all yellow; *pappus* hairy, in 1 row. (Name from the Latin *solidare*, to unite, on account of its supposed qualities of healing wounds.)

36. Senécio (Ragwort, Groundsel and Flea-bane).—*Involucre* imbricated, oblong or conical, a few smaller scales at the base; *receptacle* naked; *florets* all yellow, the outer in *S. vulgáris* wanting. (Name from the Latin *senex*, an old man, from the grey seed-down.)

37. Dorónicum (Leopard's-bane).—*Involucre* cup-shaped, scales equal, in 2 rows; *florets* all yellow; *pappus* hairy, wanting in the florets of the ray. (Name of uncertain etymology.)

38. Ínula (Elecampane).—*Involucre* imbricated, in many rows; *receptacle* naked; *florets* all yellow; *anthers* with two bristles at the base; *pappus* hairy, in 1 row. (Name probably a corruption of *Helénula*, Little Helen.)

39. Pulicária (Flea-bane).—*Involucre* loosely imbricated, in few rows; *pappus* in 2 rows, outer one short, cup-shaped, toothed, inner hairy, in other respects like Ínula. (Name from the Latin *pulex*, a flea, which is supposed to be driven away by its powerful smell.)

40. Bellis (Daisy).—*Involucre* of 2 rows of equal blunt scales; *receptacle* conical; outer *florets* white,

inner yellow ; *pappus* 0. (Name from the Latin *bellus*, pretty.)

41. Chrysánthemum (Ox-eye).—*Involucre* nearly flat, the scales membranaceous at the margin ; *receptacle*, naked ; *pappus* 0. (Name from the Greek *chrysos*, gold, and *anthos*, a flower.)

42. Matricária (Wild Chamomile).—*Involucre* cup-shaped or nearly flat, the scales imbricated ; *receptacle* conical, naked ; *florets* of the ray white, of the disk yellow ; *pappus* 0. (Name from some supposed medicinal virtues.)

43. Ánthemis (Chamomile).—*Involucre* cup-shaped, or nearly flat, the scales membranaceous at the margin ; *receptacle* convex, chaffy ; *pappus* 0, or a narrow chaffy border. (Name from the Greek *anthos*, a flower, from the value of its blossoms as a medicine.)

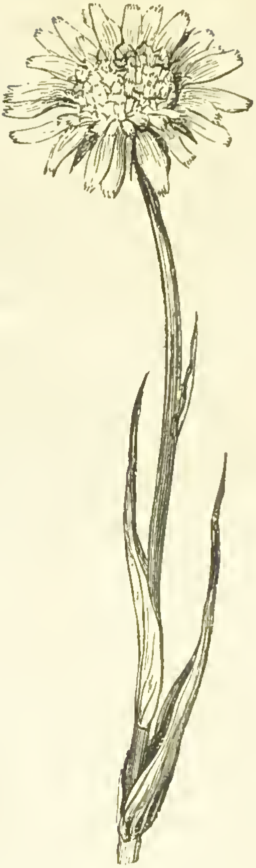
44. Achilléa (Yarrow).—*Involucre* egg-shaped or oblong, imbricated ; *receptacle* flat, chaffy ; *florets* all of one colour, those of the ray 5—10, broad ; *pappus* 0. (Named after Achilles.)

I. Cichoráceæ.—*Chicory Group.*

1. Tragopógon (*Goat's-beard*).

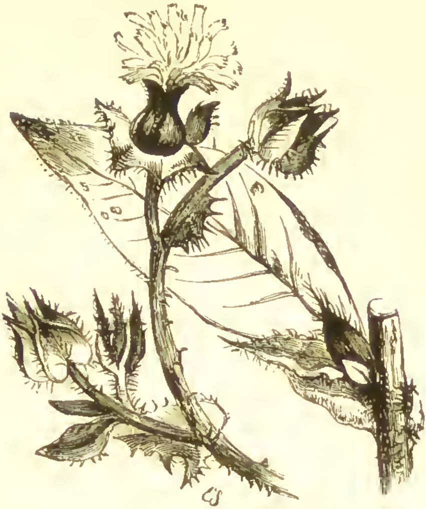
1. *T. pratensis* (Yellow Goat's-beard).—*Involucre* about as long as, or longer than, the corolla ; *leaves* broad at the base, very long, tapering, channelled, undivided ; flower-stalks slightly thickened above.—Meadows, not uncommon. An erect glaucous plant, about 2 feet high, with long grass-like leaves, and large bright yellow flowers, which always close early in the day, and have hence gained for the plant the name of John-go-to-bed-at-noon. The pappus is very beautiful, the feathery down being raised on a long stalk, and interlaced so as to form a kind of shallow cup.—Fl. June, July. Biennial.

* *T. porrifólius* (Salsafy), though not a British



TRAGOPÓGON PRATENSIS (*Yellow Goat's-beard*).

species, is occasionally found in moist meadows. In habit it resembles the last, but has purple flowers. It was formerly much cultivated for the sake of its fleshy tapering roots, which were boiled or stewed, and eaten. Its place is now supplied by *Scorzonéra Hispánica:* but directions for its culture are still given in most gardeners' calendars.



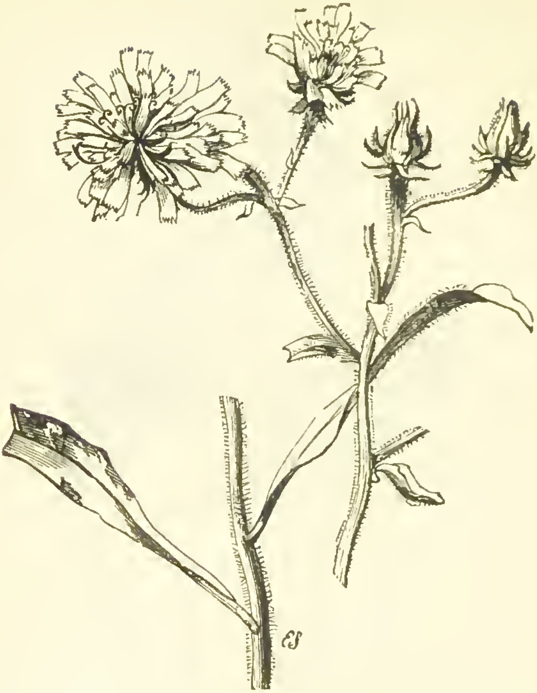
HELMÍNTHIA ECHIOÍDES (*Bristly Ox-tongue*).

2. Helmínthia (*Ox-tongue*).

1. *H. echioídes* (Bristly Ox-tongue).—Waste places, not uncommon. A stout and much branched herb, 2—3 feet high, well distinguished by its numerous *prickles*, each of which springs from a raised white spot, and by the large heart-shaped *bracts* at the base of the yellow *flowers*.—Fl. June, July. Perennial.

3. Picris.

1. *P. hieracioídes* (Hawk-weed Picris).—Waste places, common. A rather slender plant, 2—3 feet high, branched principally above; the *stems* are rough with hooked bristles; the *leaves* narrow, rough and toothed, sessile; the *flowers* numerous, yellow, with several scales on the stalks.—Fl. July—September. Biennial.

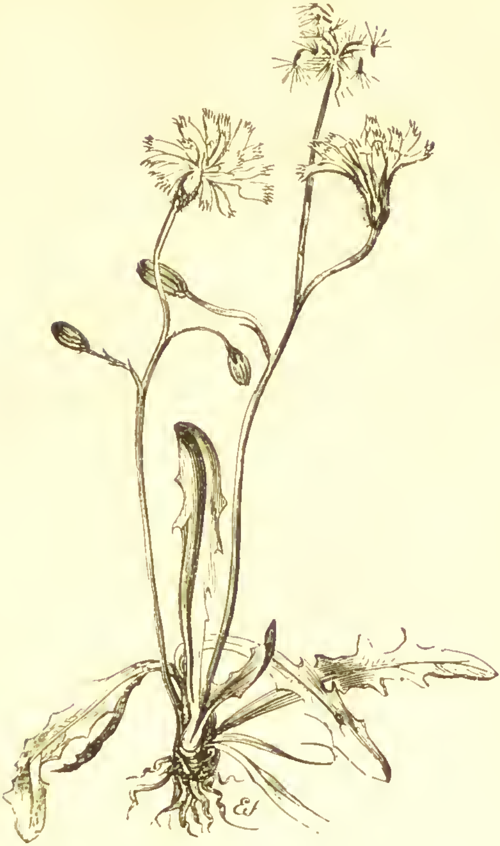


PICRIS HIERACIOÍDES (*Hawk-weed Picris*).

4. Apárgia (*Hawk-bit*).

1. *A. híspida* (Rough Hawk-bit).—*Leaves* all from the root, pinnatifid, with the lobes pointing backwards, rough with forked bristles; *stalk* single-flowered.—Meadows and waste places, frequent.—*Flowers* yellow.—Fl. June—September. Perennial.

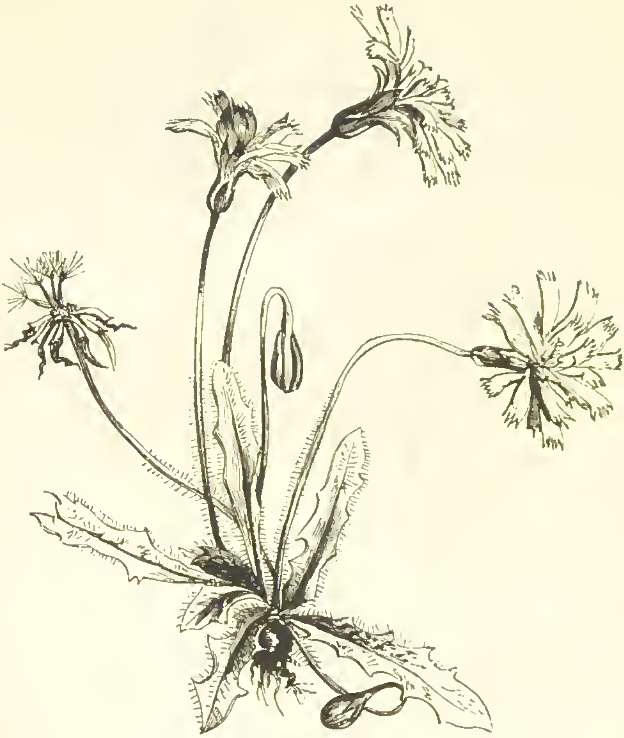
2. *A. autumnális* (Autumnal Hawk-bit).—*Leaves* all from the root, narrow, slightly hairy on the ribs beneath; *stalk* many flowered, swollen beneath the flowers.—Meadows and cornfields, frequent. A tall plant, 2—3 feet high, with a downy *involucre*, and large deep-yellow *flowers*.—Fl. August. Perennial.



APÁRGIA AUTUMNÁLIS (*Autumnal Hawk-bit*).

5. THRÍNCIA.

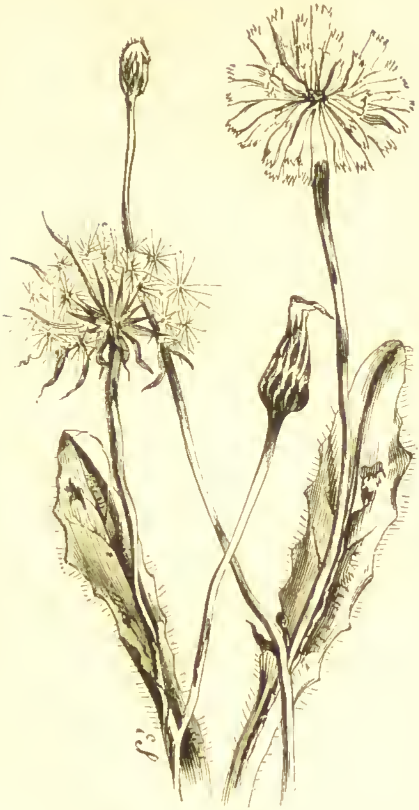
1. *T. hirta* (Hairy Thrincia).—Heaths and downs, common. A small plant, 4—6 inches high, with spreading, more or less lobed, *leaves*, which are rough with forked bristles, and leafless somewhat hairy *stalks*, each of which bears a yellow *flower*.—Fl. July—Sept. Perennial.



THRINCIA HIRTA (*Hairy Thrincia*).

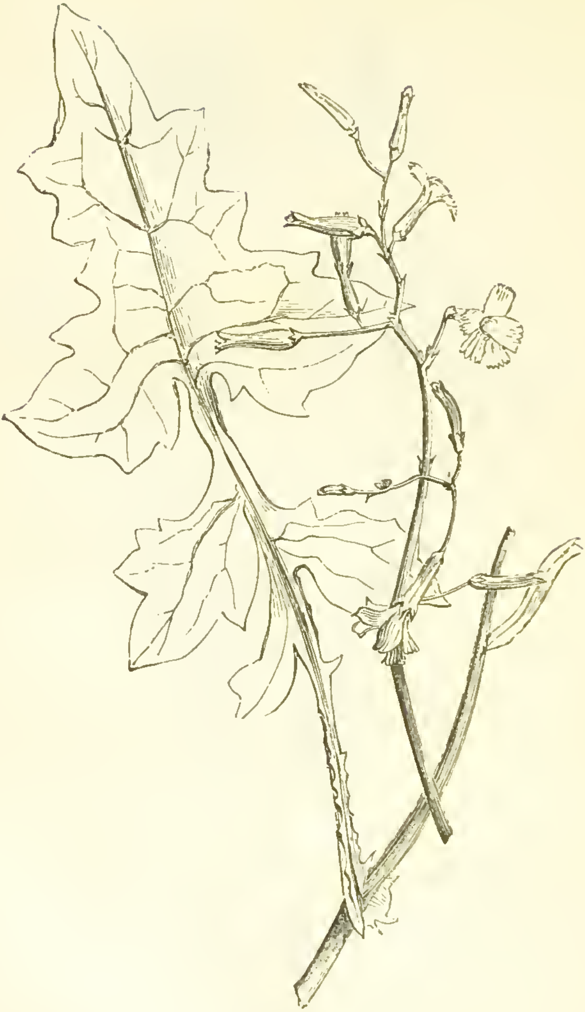
6. HYPOCHÆRIS (*Cat's-ear*).

1. *H. radicáta* (Long-rooted Cat's-ear).—Leaves all from the root, pinnatifid, with the lobes pointing backwards, bristly; *stalks* branched, smooth, with a few scales below the flowers.—Hedges and waste places, common. Well distinguished by its long branched flower-stalks, which are quite smooth throughout, and slightly swollen beneath the large yellow flowers, where there are also a few small scales.—Fl. July, August. Perennial.



HYPOCHÆRIS RADICATA (*Long-rooted Cat's-ear*).

* Besides the above, there are two other British species of Hypochæris: *H. glabra* (Smooth Cat's-ear), which has nearly smooth *leaves,* and small yellow *flowers* scarcely larger than the *invol̄ucre*; gravelly places, not common; and *H. maculáta* (Spotted Cat's-ear), which has rough spreading leaves, which are not lobed, and 1 (or rarely more) very large deep yellow *flower;* limestone and magnesian rocks, rare.



LACTÚCA MURÁLIS (*Ivy-leaved Lettuce*)

7. LACTÚCA (*Lettuce*).

1. *L. murális* (Ivy-leaved Lettuce).—*Florets* 5; *leaves* pinnatifid, variously cut, with the terminal lobe largest; *panicles* spreading.—Woods and old walls, not uncommon. A slender plant, leafy below, 1—2 feet high, with small yellow heads, each of which contains 5 equal florets, and thus resembles a simple flower of five petals. The panicle has a singularly angular growth; the fruit is black.—Fl. July—September. Biennial.

* There are three other British species of *Lactúca*, which are less common than the preceding; *L. Scoríola* (Prickly Lettuce), which has nearly perpendicular *leaves*, prickly at the back; *L. virósa* (Strong-scented Lettuce) has spreading prickly *leaves*; and *L. saligna* has narrow toothed *leaves*, and bears its *flowers* in lateral tufted clusters. The Garden Lettuce (*L. satíva*) belongs to this genus, but is not a native plant.

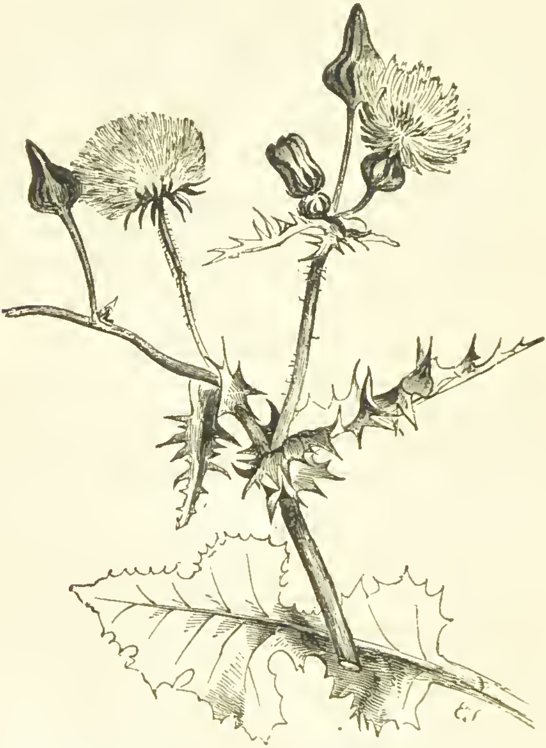
8. SONCHUS (*Sow-thistle*).

1. *S. oleráceus* (Common Sow-thistle, Milk-thistle).—*Leaves* oblong, more or less pinnatifid or entire, toothed, often prickly, the upper ones clasping the stem; *stem* branched; *heads* somewhat umbellate; *involucres* smooth.—Waste places, and as a weed in gardens, common. This plant is commonly known under the name of Milk-thistle, and is much sought after as food for rabbits.—Fl. June—September. Annual.

2. *S. arvensis* (Corn Sow-thistle, Milk-thistle).—*Leaves* oblong, the lower ones pinnatifid, with the lobes pointing backwards, toothed, heart-shaped at the base; *stem* simple; *heads* corymbose; *involucre* and *flower-stalks* hairy.—In similar situations with the last, from which it may be readily distinguished by its simple stem and much larger flowers.—Fl. August, September. Perennial.

* *S. palustris* (Marsh Sow-thistle) is a much taller species than either of the preceding, growing 6—8 feet

high; the *leaves* are arrow-shaped at the base; the *flowers* large and yellow, with hairy *involucres.* It grows in marshy places; rare. *S. alpínus* (Alpine Sow-thistle), —now called *Mulgédium alpínum,*—is a very handsome plant, with large blue *flowers.* It grows on the Clova mountains, but is rare.

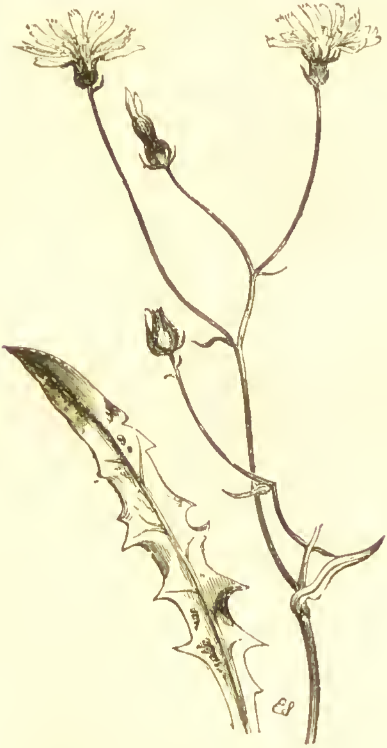


SONCHUS OLERÁCEUS (*Common Sow-thistle, Milk-thistle*).

9. Crepis (*Hawk's-beard*).

1. *C. vírens* (Smooth Hawk's-beard).—*Leaves* smooth, innatifid, with the lobes pointing backwards, the upper

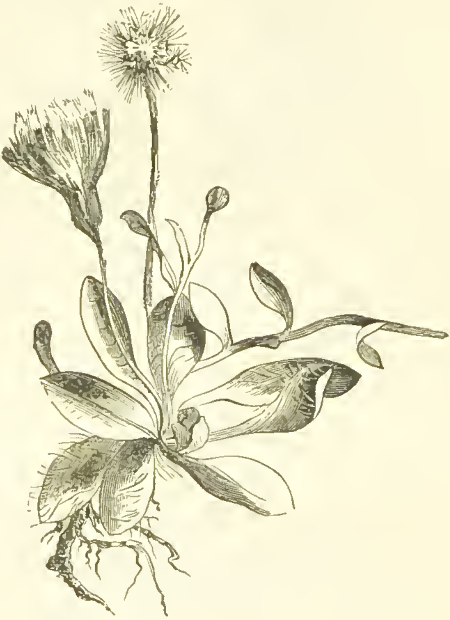
ones narrow, arrow-shaped at the base, and elasping the stem ; *flowers* numerous.—In waste ground, and on the roofs of cottages : common. Varying in height, from 6 inches to 2 feet, or more, and producing abundance of yellow flowers.—Fl. July—September. Annual.



CREPIS VIRENS (*Smooth Hawk's-beard*).

C. paludósa (Marsh Hawk's-beard).—*Leaves* smooth, the lower one's pinnatifid, with the lobes pointing backwards, tapering into a stalk ; the upper ones narrow, heart-shaped at the base, and clasping the stem.—Damp woods; not unfrequent.—Fl. July—September. Perennial.

* There are several other British species of *Crepis*, some of which are of common occurrence. For a description of these the student is referred to "Hooker and Arnott's British Flora." Two of them are described under the name *Borkhaúsia*.



HIERÁCIUM PILOSELLA (*Mouse-ear Hawk-weed*).

10. Hieracium (*Hawk-weed*).

1. *H. Pilosella* (Mouse-ear Hawk-weed).—*Stem* single-flowered, leafless; *scions* creeping; *leaves* entire, hairy. —Banks, and dry pastures; common. Well distinguished from all other British plants of the Order by its creeping scions, by its hairy undivided leaves, which

are hoary underneath, and by its bright lemon-coloured flowers.—Fl. May—July. Perennial.

2. *H. murórum* (Wall Hawk-weed).—*Stem* many-flowered, with 1 leaf, branched above; *root-leaves* egg-shaped, toothed at the base.—Walls and rocks; common. A very variable plant, 12—18 inches high, rarely having more than one leaf on the stem, sometimes none; the leaves are usually more or less hairy, the flowers small, yellow.—Fl. July, August. Perennial.

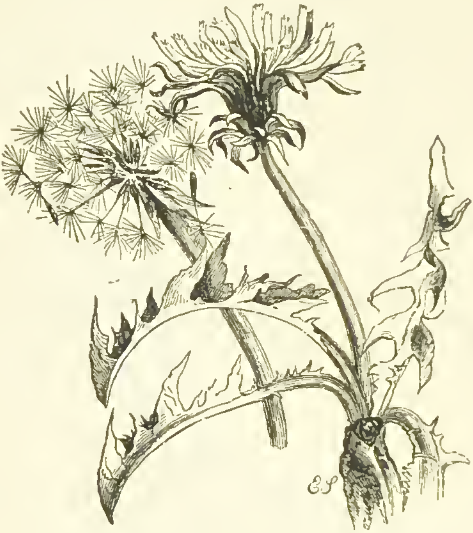
3. *H. sylváticum* (Wood Hawk-weed).—*Stem* many-flowered, with a few leaves; *leaves* narrow, egg-shaped, toothed, with the teeth pointing upwards; *involucre* hoary with down.—Woods and banks; common. A very variable plant, both in size and habit. The leaves are sometimes very slightly toothed, at other times deeply so, and often spotted with purple; the flowers are large and yellow.—Fl. August, September. Perennial.

4. *H. Sabaudum* (Shrubby Hawk-weed).—*Stem* rigid, many-flowered, leafy; lower *leaves* tapering into a short stalk, upper sessile, rounded at the base—Woods and banks; not unfrequent. As variable a plant as the last. —Fl. August, September. Perennial.

5. *H. umbellatum* (Narrow-leaved Hawk-weed).—*Stem* rigid, many-flowered, leafy; *leaves* narrow, slightly toothed; *flowers* in a terminal corymb; *scales* of the *involucre* reflexed at the point.—Woods; not unfrequent. A tall plant, 2—3 feet high, with a remarkably erect growth, unbranched, and terminating in an almost umbellate tuft of large, yellow flowers.—Fl. August, September. Perennial.

* No less than twenty-two other species of Hawk-weed besides the above are described by Hooker and Arnott, some of which are doubtful natives, the others rare. Of these it is not thought necessary to give even the names here, but most of the common species will agree with one or other of the descriptions given above. The student, however, must not be disheartened if he find

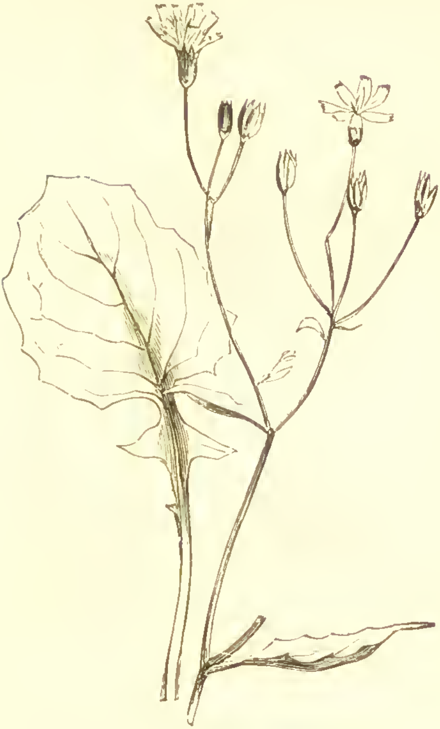
himself occasionally at fault, the family being one of the most perplexing in this difficult Order.



LEÓNTODON TARÁXACUM (*Common Dandelion*).

11. Leóntodon (*Dandelion*).

1. *L. Taráxacum* (Common Dandelion).—Cultivated ground; abundant. Dandelion, from the French, *Dent-de-lion*, lion's-tooth, is the popular name of nearly all the larger yellow flowers belonging to this Sub-order. The true Dandelion may, however, be readily known by the following characters. The *leaves* all spring from the root, and are deeply cut, with the sharp lobes pointing backwards; the *flower-stalks* are hollow, smooth, and leafless, and bear a single flower; the *outer* scales of the *involucre* are reflexed; the *pappus* is stalked, and white; the *heads* when in fruit are of a globular form; and the *receptacle*, after the fruit has been blown away, is convex, and dotted.—Fl. nearly all the year round. Perennial.



LAPSÁNA COMMÚNIS (*Common Nipple-wort*).

12. Lapsána (*Nipple-wort*).

1. *L. commúnis* (Common Nipple-wort).—*Leaves* stalked, toothed, heart-shaped at the base; *stem* branched; *flowers* numerous.—Hedges and waste ground; common. A leafy plant, 2—3 feet high, with numerous small yellow flowers; the lower leaves often have several small lobes running along the opposite sides of the stalks.—Fl. July, August. Annual.

* *L. pusilla* is a rare species, occasionally found in

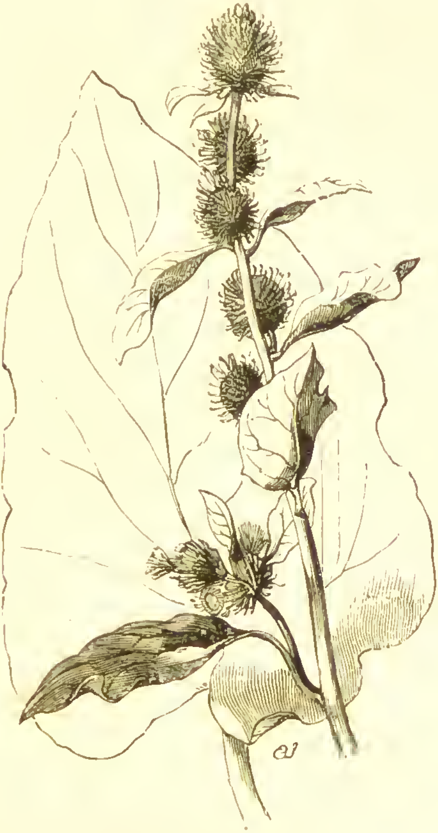
cultivated ground. The *stems* in this species are leafless, 6—8 inches high, swelling and hollow upwards, and terminating in small yellow *flowers.*

CICHÓRIUM ÍNTYBUS (*Wild Chicory, or Succory*).

13. Cichórium (*Chicory*).

1. *C. Íntybus* (Wild Chicory, or Succory).—Well distinguished by its tough, twig-like *stems*, along which are ranged large, blue, sessile *flowers.*—Sir Jas. E. Smith, the distinguished founder of the Linnean Society, seldom saw the delicate blue flowers of the wild Succory without recalling to mind, that, when in infancy their beauty caught his eye and attracted his admiration above most others, he tried in vain to pluck them from the stalk. In an introductory lecture at the Royal

Institution, he thus alludes to this circumstance:—"From the earliest period of my recollection, when I can just remember tugging ineffectually with all my infant strength at the tough stalks of the wild Succory,



ARCTIUM LAPPA (*Common Bur-dock*).

on the chalky hills about Norwich, I have found the study of nature an increasing source of unalloyed pleasure, and a consolation and a refuge under every pain."

II. CYNAROCÉPHALÆ.—*Thistle Group.*

14. ARCTIUM (*Bur-dock*).

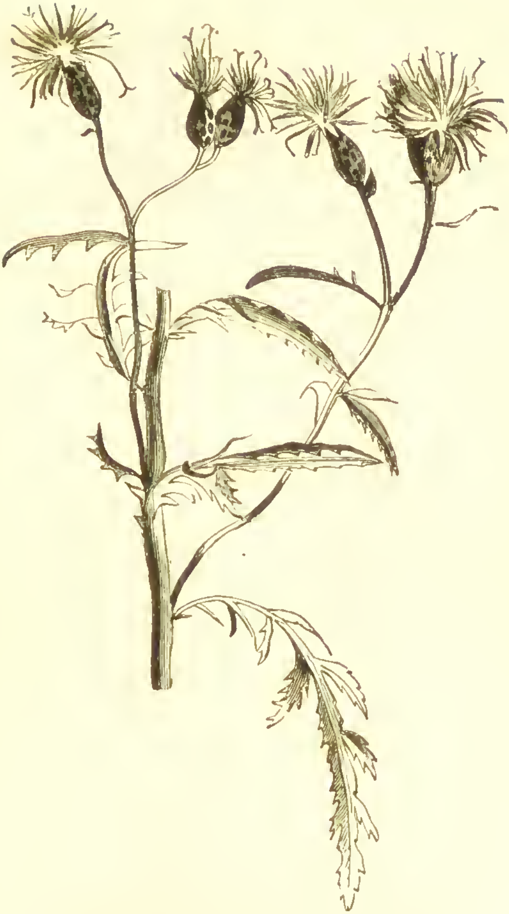
1. *A. Lappa* (Common Bur-dock).—The only British species.—Waste places ; common. A large and stout herbaceous plant, remarkable for the picturesque character of its wavy *leaves*, (which are often introduced by artists into the foreground of their landscapes,) and for the round heads of purple *flowers*, inclosed in a globular *involucre* of hooked scales, by help of which the seeds are attached to the coats of animals, and conveyed to a distance. The scales are often interwoven with a white cottony substance.—Fl. July, August. Biennial.

15. SERRÁTULA (*Saw-wort*).

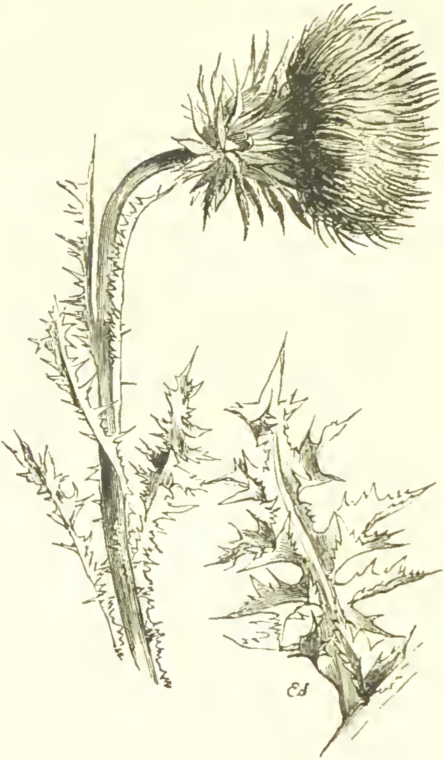
S. tinctória (Common Saw-wort).—The only British species.—Pastures ; frequent. A slender plant, 1—2 feet high, with a stiff erect *stem*, slightly branched above. deeply cut and serrated *leaves*, and small terminal *heads* of purple *flowers ;* the outer scales of the *involucre* are smooth and close pressed, the inner tinged with purple. —Fl. August. Perennial.

16. SAUSSÚREA.

1. *S. alpína* (Alpine Saussurea).—The only British species, found on Snowdon and the Highland mountains. —The *stem* is from 8—12 inches high ; the *leaves* cottony beneath ; and the *flowers* light purple, in a terminal cluster.—Fl. August. Perennial.



SERRATULA TINCTORIA (*Common Saw-wort*).



CARDUUS NUTANS (*Thistle*).

17. Carduus (*Thistle*).

1. *C. nutans* (Musk Thistle).—*Heads* solitary, drooping; *scales* of the *involucre* tapering to a rigid point, cottony, the outer ones bent back; *stem* winged by the thorny leaves.—Waste places; common. A very hand-

some plant, about 2 feet high, with a furrowed cottony stem, deeply lobed thorny leaves, which are downy on the veins beneath, and large deep purple flowers, to which the radiated involucre is a very ornamental appendage. This is sometimes called the Scotch Thistle, but incorrectly. The upper part of the flower-stalk is nearly bare of leaves, and the flower itself has a powerful odour.—Fl. June—August. Biennial.

2. *C. acanthoídes* (Welted Thistle).—*Heads* clustered, round; *scales* of the *involucre* linear, thorny, spreading or erect; *stem* winged by the thorny leaves.—Waste places; common. A branched, very thorny plant, 3—4 feet high, with small heads, of deep purple, or sometimes white *flowers*.—Fl. June, July. Annual.

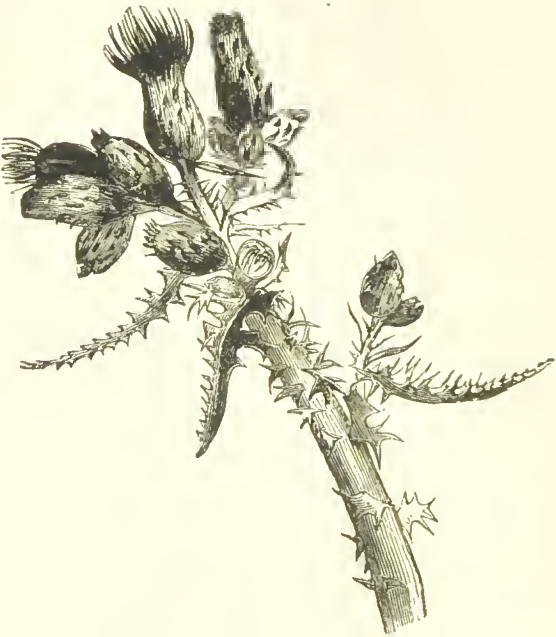
3. *C. tenuiflórus* (Slender-flowered Thistle).—*Heads* clustered, cylindrical; *scales* of the *involucre* thorny, erect; *stem* winged by the thorny leaves, which are cottony beneath.—Waste places, especially near the sea; very common in the West of England. Well distinguished by the small heads of pink *flowers*, and the very long erect *scales* of the involucre. The stems are 2—4 feet high, and bear all the flowers at the summit.—Fl. June, July. Annual.

* *C. Mariánus* (Milk Thistle) is a stouter plant than either of the preceding, and is distinguished at once by the white veins on its *leaves*, from which it derives its popular name. It was called by the early botanists *Carduus Mariæ*, or "Our Lady's Thistle."—Fl. June, July. Biennial.

18. Cnicus (Plume-Thistle).

1. *C. lanceolátus* (Spear Plume-Thistle).—*Heads* mostly solitary, stalked, egg-shaped; *scales* of the involucre thorny, spreading, woolly; *stem* winged by the thorny leaves, the lobes of which are 2-cleft.—Waste places and hedges; common. This is more like the Cotton-Thistle (*Onopordum*) than any other species of this genus. It grows 3—4 feet high; the *leaves* are downy beneath,

and the *heads* of *flowers*, though not so large as those of the *Cotton-Thistle*, have the same dull purple hue.—Fl. July—September. Biennial.



CNICUS PALUSTRIS (*Marsh Plume-Thistle*).

2. *C. palustris* (Marsh Plume-Thistle).—*Heads* clustered, egg-shaped ; *scales* of the involucre closely pressed, pointed ; *stem* winged by the thorny leaves.—Moist meadows and borders of fields ; very common. The tallest of the British Thistles, 4—10 feet high, consisting of a single, stout, hollow *stem*, which is branched towards the summit, and bears numerous clusters of rather small, deep purple (sometimes white) *flowers*. The *leaves* are thickly armed with short thorns, which

are often of a brownish hue.—Fl. July, August. Biennial.

3. *C. arvensis* (Creeping Plume-Thistle).—*Heads* of flowers numerous, stalked, egg-shaped; *scales* of the involucre closely pressed, pointed, but scarcely thorny; *stem* not winged; *root* creeping.—Border of fields; very common. A handsome weed, about two feet high; the flowers, which grow in a corymbose manner, are of a light purple colour, and smell like those of the *Musk Thistle*.—Fl. July. Perennial.

4. *C. pratensis* (Meadow Plume-Thistle).—*Heads* of flowers mostly solitary; *stem-leaves* few, soft, and wavy. —Moist meadows; not general. A small plant, 12—18 inches high, with a cottony stem, bearing a few leaves, and rarely more than one small purple flower.—Fl. July. Perennial.

5. *C. acaulis* (Dwarf Plume-Thistle).—*Heads* of flowers solitary and stemless, or nearly so.—Dry gravelly or chalky pastures: not general, but in some places very abundant, and a pernicious weed. A low plant, consisting of a few thorny *leaves*, and a single, almost stemless, purple *flower*, by which character it is readily distinguished from all the rest of the Thistle Tribe.—Fl. July, August. Perennial.

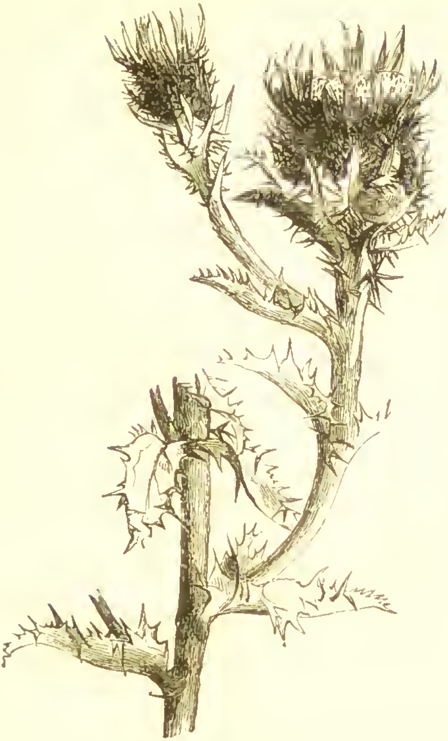
* Less common species of *Cnicus* are *C. erióphorus* (Woolly-headed Plume-Thistle), distinguished by the thick white wool which clothes the *scales* of the very large *flowers*: *C. tuberosus* (Tuberous Plume-Thistle), which grows only in Wiltshire, an erect single-stemmed plant, with a single, large purple *flower*: *C. heterophyllus* (Melancholy Plume-Thistle), a mountain plant, with an erect, cottony *stem*, and a single, handsome, purple *flower*.

19. ONOPORDUM (*Cotton Thistle*).

1. *O. Acánthium* (Scotch Thistle).—The commonest of the thistle-tribe, abounding in waste ground, and

by road sides, in most soils. The *involucre* is globose, with the *scales* spreading in all directions ; the *stem* is winged with the rough cottony *leaves* ; the *flowers* are large, of a dull purple hue, and mostly solitary, or but slightly clustered, at the ends of the branches. The seeds are the favourite food of goldfinches, which may often be seen in autumn fluttering like butterflies round the withered stalks. This species is the true *Scotch Thistle.*—Fl. July, August. Biennial.

ONOPORDUM ACÁNTHIUM (*Scotch Thistle*).



CARLÍNA VULGÁRIS (*Common Carline Thistle*).

20. Carlína (*Carline Thistle*).

1. *C. vulgáris* (Common Carline Thistle).—The only British species, growing on dry heaths, especially near the sea.—Readily distinguished from every other British Thistle by the long *inner scales* of the *involucre*, which are straw-coloured and glossy, and spread in a radiate manner so as to resemble petals. In dry weather they lie flat, but when the atmosphere is moist, they rise and form, as it were, a pent-house over the florets. Their

texture is like that of the flowers called "Everlasting;" hence, they scarcely alter their appearance when dead, and as the whole plant is remarkably durable, they often retain their form and position till the succeeding spring. In Germany, France, and Italy, the large white flower of one species, *C. acaulis*, is often nailed upon cottage-doors, by way of a hygrometer, as it closes before rain.—Fl. June. Biennial.

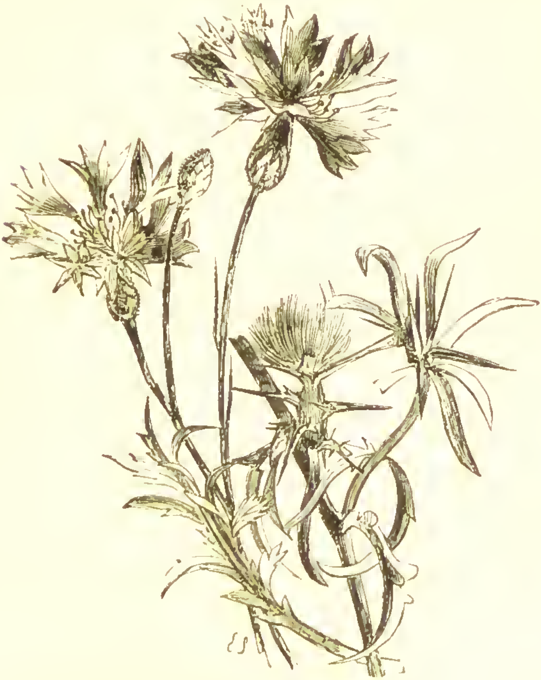
21. CENTAURÉA (*Knap-weed, Blue-bottle*).

1. *C. nigra* (Black Knap-weed).—Outer scales of the *involucre* egg-shaped, fringed with spreading bristles; *lower leaves* toothed, often with a few small lobes at the base, *upper* narrow, tapering; *flowers* with or without a ray; *pappus* very short, tufted.—Meadows and corn-fields; common. A tough-stemmed plant, 1—2 feet high, with heads of dull purple *flowers*, which are remarkable for the brown, or almost black, hue of the scales of the *involucre*. This plant is popularly known by the name of *Hard-head*.—Fl. June—August. Perennial.

2. *C. Scabiósa* (Greater Knap-weed).—Outer *scales* of the *involucre* egg-shaped, somewhat downy, fringed; *leaves* pinnatifid, roughish, segments tapering to a point. —Meadows and corn-fields; common. Larger and stouter than the last, from which it is distinguished by the brighter hue of its handsome radiate flowers, and the light-coloured fringe on the scales of the involucre. —Fl. July, August. Perennial.

3. *C. Cýanus* (Corn Blue-bottle).—Outer *scales* of the *involucre* deeply toothed; *leaves* very narrow, slightly toothed, cottony.—Corn-fields; frequent. One of the prettiest of flowers, and well meriting the distinctive name, often given to it, of *Corn-flower*. The flowers are bright blue, with dark anthers, and when mixed with Poppies and yellow Ox-daisies, form as brilliantly-coloured a bouquet as can be imagined. Children often

string the outer florets by help of a needle and thread, and after bringing the ends together, press them in a book, to form a wreath, which retains its colour for a long while. Recently expanded flowers should be chosen, or their colour will fade. The juice of the flowers, expressed and mixed with cold alum-water, may be used in water-colour drawing. Rose-coloured, white and dark purple varieties are commonly to be met with in gardens, and the last are occasionally found in a wild state.—Fl. July, August; and, in turnip-fields, again in October and November. Annual, or Biennial.



C. CÝANUS *and* C. CALCÍTRAPA (*Corn Blue-bottle and Star-Thistle*).

4. *C. Calcítrapa* (Common Star-Thistle).—*Scales* of the *involucre* ending each in a long and stiff thorn.—Gravelly and sandy places in the South of England. Well marked by its purplish *flowers*, which are armed below with spreading thorns, and resemble in figure the cruel iron instrument, named a *Caltrops*, which is used in war to lame horses, being thrown on the ground where it is expected that cavalry will pass. The instrument is so constructed, that, in whatever position it lies, one point sticks upwards.—Fl. July, August. Annual.

* *C. Jácea* (Brown Radiant Knap-weed) is a very rare species, with purple *flowers*, the outer scales of the *involucre* being pinnatifid, the inner regularly jagged.

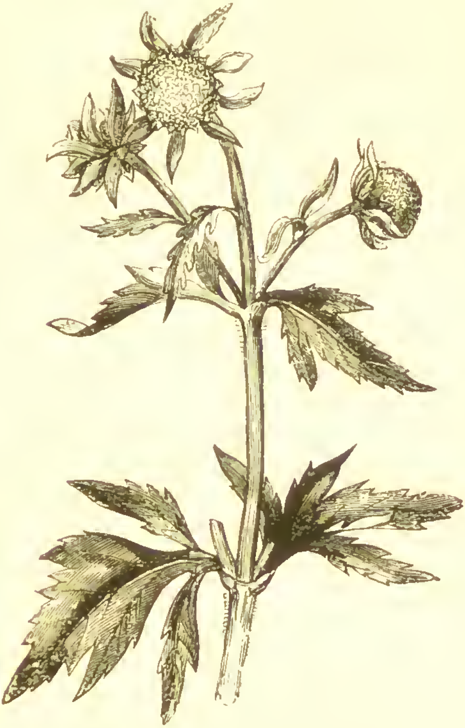
III. TUBIFLÓRÆ.—*Tansy Group.*

22. BÍDENS (*Bur-Marigold*).

1. *B. cérnua* (Nodding Bur-Marigold).—*Heads* of flowers drooping; *leaves* serrated, undivided; bristles of the fruit 3—4.—Watery places; frequent. A somewhat succulent plant, 1—2 feet high, with narrow, serrated, smooth leaves, and button-like, drooping heads of brownish yellow flowers, at the base of which are several leafy bracts. The fruit is oblong, and terminates in several stiff bristles, each of which is thickly set with minute points, which are turned back like the barbs of an arrow, so as to take a firm hold on the coat of any animal which comes in contact with them.—Fl. July—September. Annual.

2. *B. tripartíta* (Trifid Bur-Marigold).—*Heads* of flowers nearly erect; *leaves* 3-parted.—Watery places; common. Distinguished from the last by its somewhat

smaller *heads* of flowers, 3-parted *leaves*, and by having 2—3 bristles on the fruit.—Fl. July—September. Annual.

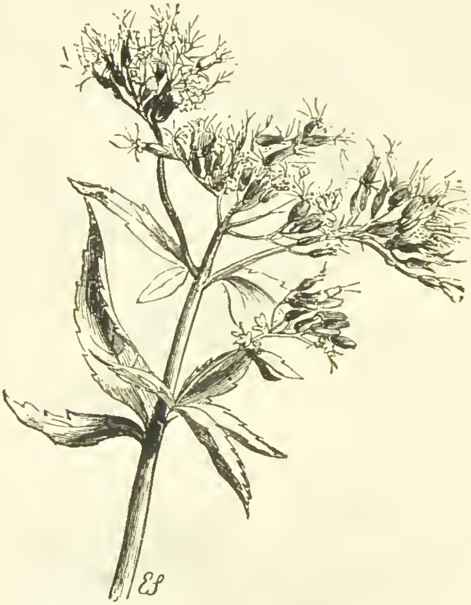


BIDENS TRIPARTÍTA (*Trifid Bur-Marigold*).

23. Eupatorium (*Hemp-Agrimony*).

1. *E. cannábinum* (Common Hemp-Agrimony).—The only British species.—Moist shady places; common. A tall downy plant, 3—6 feet high, with a reddish *stem*, 3—5 parted *leaves*, and terminal corymbs

of small crowded *heads* of dull lilac *flowers*, which are remarkable for their very long, deeply cloven *styles.*—Fl. July, August. Perennial.



EUPATORIUM CANNÁBINUM (*Common Hemp-Agrimony*).

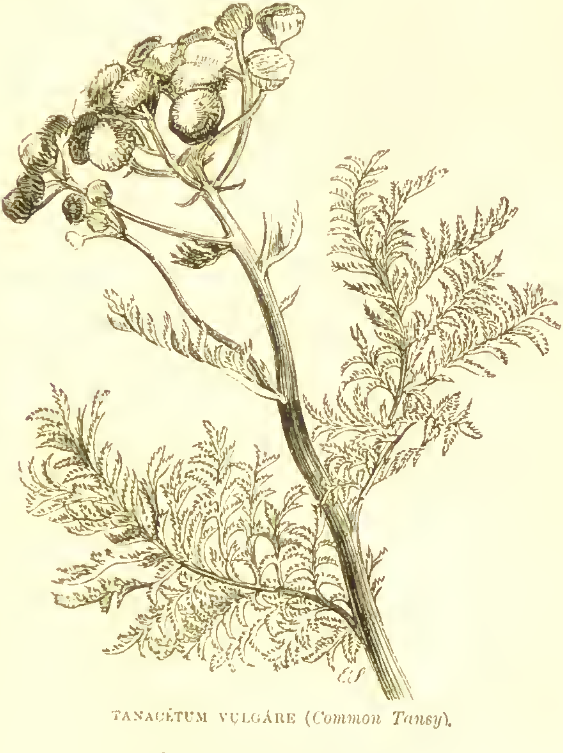
24. Chrysócoma (*Goldylocks*).

1. *C. Linosýris* (Flax-leaved Goldylocks).—The only British species.—Limestone cliffs ; very rare. An herbaceous plant, 12—18 inches high, with erect, simple *stems*, which are thickly set with smooth, linear *leaves*, and bear a few heads of yellow *flowers* at the extremity. —Fl. August, September. Perennial.

25. Diótis (*Cotton-weed*).

1. *D. marítima* (Sea-side Cotton-weed).—The only species.—Sandy sea-shores ; rare. The *roots* run deeply

into the sand; the *stems*, which are about a foot high, are thickly set with oblong, blunt *leaves*, which, as well as the rest of the plant, are covered with thick white cotton, and almost hide the small terminal *heads* of yellow *flowers*.—Fl. August, September. Perennial.

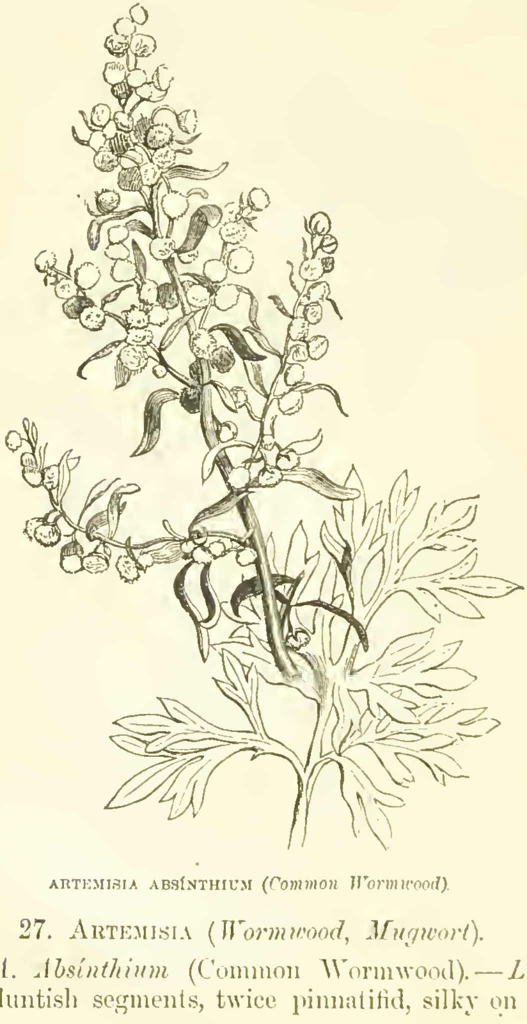


TANACÉTUM VULGÁRE (*Common Tansy*).

26. Tanacétum (*Tansy*).

1. *T. vulgáre* (Common Tansy).—The only British species.—Hedges, and waste ground; common. Growing 2—3 feet high, and well distinguished by its deeply twice pinnatifid, cut *leaves*, and terminal corymbs of bright yellow, button-like *flowers*. The whole plant is

bitter and aromatic, and is not only used in medicine, but forms the principal ingredient in the nauseous dish called *Tansy pudding.*—Fl. August. Perennial.



ARTEMISIA ABSÍNTHIUM (*Common Wormwood*).

27. Artemisia (*Wormwood, Mugwort*).

1. *A. Absínthium* (Common Wormwood).—*Leaves* with bluntish segments, twice pinnatifid, silky on both

sides ; *heads* hemispherical, drooping.—Waste ground ; common. A bushy plant, with silky stems and leaves, and panicles of numerous small heads of dull yellow flowers. The whole plant is bitter and aromatic, and is much used, in the rural districts where it abounds, as a tonic.—Fl. July—September. Perennial.

2. *A. vulgáris* (*Mugwort*).—*Leaves* pinnatifid, with acute segments ; white with down beneath ; *heads* oblong.—Hedges, and waste places ; common. Taller, and more slender than the last ; well distinguished by the *leaves* being green above and white below, and by the absence of aromatic odour.—Fl. July—September. Perennial.

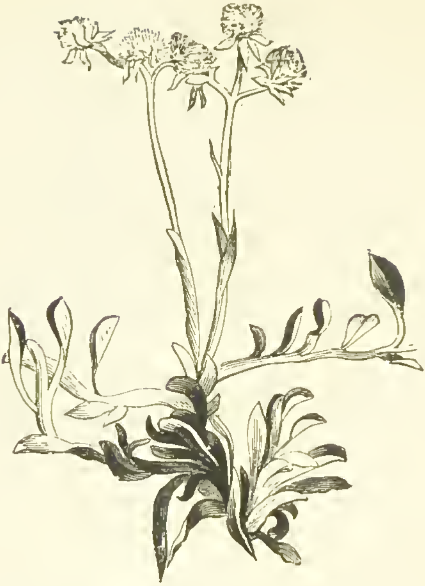
3. *A. marítima* (Sea Wormwood).—*Leaves* twice pinnatifid, downy on both sides ; *heads* in racemes, oblong.—Salt marshes ; frequent. Somewhat resembling *A. Absínthium*, but smaller and well distinguished by the above characters. The clusters of flowers are sometimes drooping, sometimes erect.—Fl. July—September. Perennial.

* *A. campestris* (Field-Wormwood) is a rare species, growing on sandy heaths in Norfolk and Suffolk. In this species the segments of the *leaves* terminate in points, and the *stems*, until flowering, are prostrate.

28. ANTENNARIA (*Everlasting*).

1. *A. dioíca* (Mountain Cud-weed).—The only British species.—Mountain heaths, frequent. A pretty little plant, 3—6 inches high, with oblong *leaves*, which are broadest towards the end, green above, cottony below ; the *heads* of flowers grow 4—6 together, and are rendered conspicuous by the white or rose-coloured *involucre*, which is of the texture commonly termed *everlasting*.—Fl. July, August. Perennial.

* The *White Everlasting* of gardens is *A. margaritácea*, a much larger plant. It is occasionally found in situations where it is apparently wild, but is not considered to be indigenous.



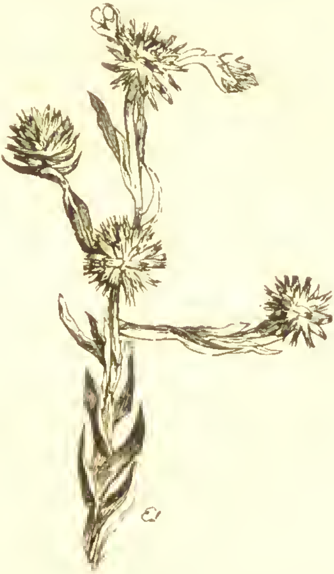
ANTENNÁRIA DIOÍCA (*Mountain Everlasting*).

29. GNAPHALIUM (*Cud-weed*).

1. *G. uliginosum* (Marsh Cud-weed).—*Stems* much branched, woolly; *leaves* very narrow, downy, overtopping the clustered, terminal heads.—Wet sandy places, especially where water has stood during winter: common. A small plant, 3—6 inches high, rendered conspicuous by its tufted white stems and leaves, and by the glossy, yellowish-brown scales of its small clustered flowers.—Fl. August, September. Annual.

* Two other species of Cud-weed are found in Scotland: *G. sylváticum* (Highland Cud-weed), a cottony plant, with a simple *stem*, bearing its heads of *flowers* in a leafy *spike;* this species is also found in gravelly pastures in England: and *G. supínum* (Dwarf Cud-

weed), common on the summits of the Highland mountains, also a cottony plant, but rarely exceeding 2—3 inches in height, with tufted *leaves*, and flowering *stems* almost bare of leaves.



FILÁGO GERMÁNICA (*Common Filago*).

30. FILÁGO.

1. *F. Germánica* (Common Filágo).—*Stem* cottony, erect, terminating in a globular assemblage of *heads*, from the base of which rise two or more *flower-stalks*, which are prolific in like manner.—Dry gravelly places, common. A singular little plant, 6—8 inches high,

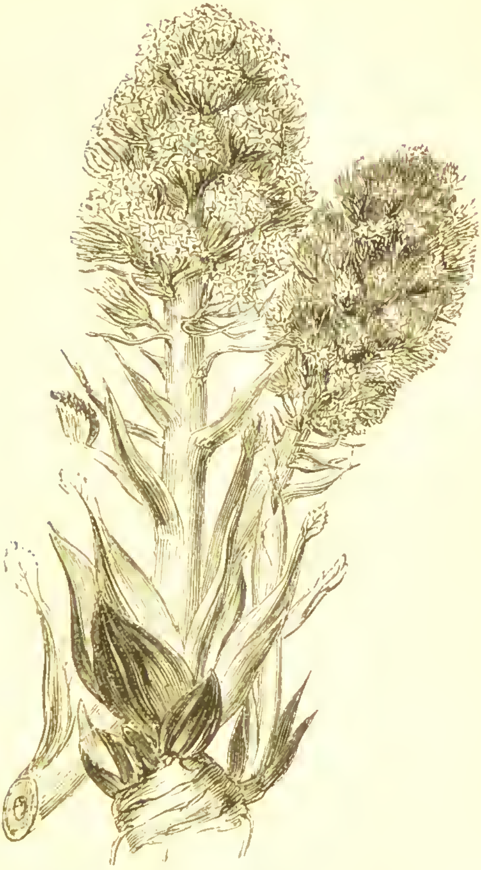
well distinguished by the above character. From this curious mode of growth, the plant was called by the old botanists *Herba impia* (the undutiful herb), as if the young shoots were guilty of disrespect by overtopping the parent.—Fl. June, July. Annual.

2. *F. mínima* (Least Filágo).—*Stem* erect, repeatedly forked; *leaves* very narrow, cottony, pressed to the stem; *heads* conical, in lateral and terminal clusters, shorter than the leaves.—Dry gravelly places, common. Yet smaller than the last, growing 4—6 inches high, with cottony stems and leaves, and brownish-yellow flowers.—Fl. July, August. Annual.

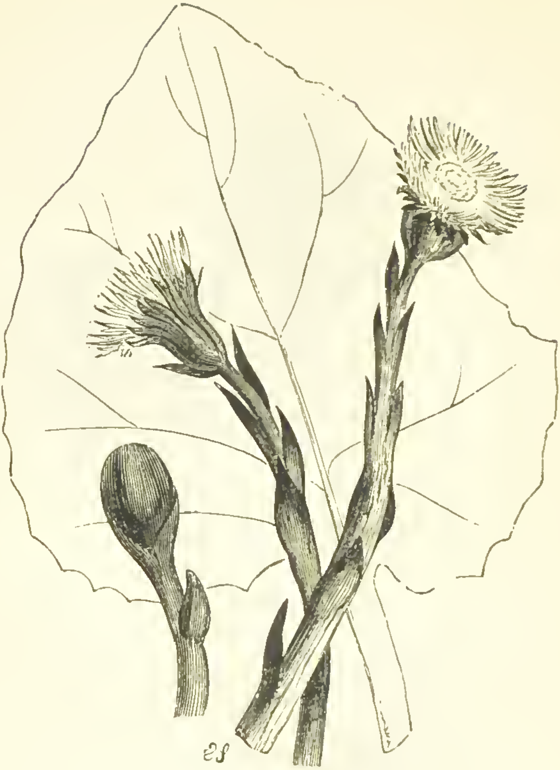
* A third species of *Filágo* (*F. Gállica*) occurs in several parts of England and Scotland, and differs from the last in bearing *leaves* much longer than the *flowers*.

31. Petasítes (*Butter-Bur*).

1. *P. vulgáris* (Common Butter-Bur).—The only British species.—Marshy meadows, not unfrequent. The largest, and where it abounds, the most pernicious, of all the weeds which this country produces. The *flowers*, which are of a dull lilac colour, appear early in spring, and are succeeded by downy, kidney-shaped *leaves*, 1—3 feet in diameter, which by shading the ground check the growth of all other plants. "The early blossoming of this rank weed induces the Swedish farmers to plant it near their bee-hives. Thus we see in our gardens the bees assembled on its affinities, *P. alba* and *P. fragrans*, at a season when scarcely any other flowers are expanded."—*Hooker and Arnott.* These two last species are common in shrubberies, almost hiding the ground with their broad leaves, thriving beneath the shade of trees and shrubs, but overpowering all herbaceous plants, and eventually, it is said, even the shrubs themselves.—Fl. April, May. Perennial.



PETASÍTES VULGARIS (*Common Butter-bur*).



TUSSILÁGO FÁRFARA (*Colt's-foot*).

IV. RADIATÆ.—*Daisy Group.*

32. TUSSILÁGO (*Colt's-foot*).

1. *T. Fárfara* (Colt's-foot).—The only British species, abounding in clayey fields, where it is a very pernicious weed. The *flower-stalks*, which spring directly from the roots, are covered with scale-like *bracts*, and bear each a single yellow *flower*, with numerous narrow rays ; the

leaves, which do not appear until the flowers have withered, are roundish heart-shaped and angular, with dark teeth, and are covered with cottony down. The *heads* of *flowers* droop before expansion, and the stalks after flowering lengthen considerably. The Goldfinch frequently lines its nest with the pappus of this plant. The cotton of the leaves was formerly used as tinder, and the leaves themselves afford a rustic remedy for coughs.—Fl. March, April. Perennial.

33. Erígeron (*Flea-bane*).

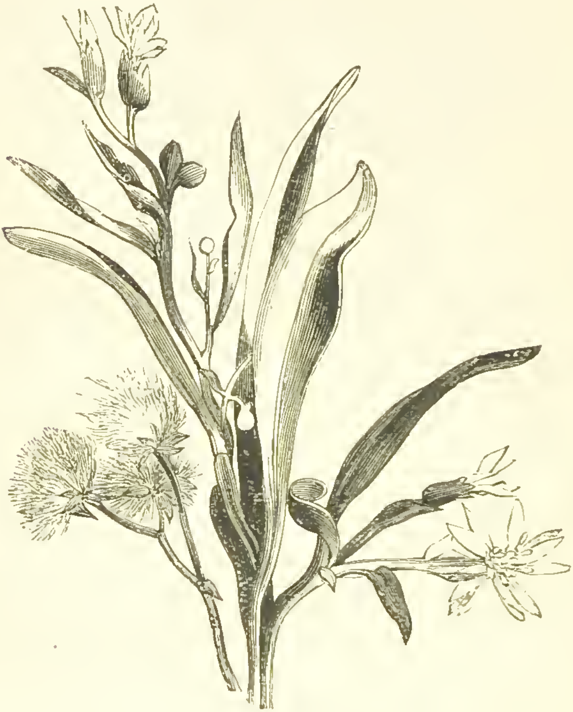
1. *E. acris* (Blue Flea-bane).—*Branches* erect, rough, alternate, bearing single heads ; *leaves* narrow, entire, blunt.—Dry places and walls, not common. A much branched plant, 6—18 inches high, with small heads of inconspicuous flowers, of which the inner florets are yellowish, the outer dull blue. The pappus is very long and tawny.—Fl. August. Biennial.

* *E. alpínus* (Alpine Flea-bane) occurs on the Highland mountains, growing 3—5 inches high, each stem bearing a single *flower*, the outer *florets* of which are light purple ; *E. Canadensis* (Canada Flea-bane) grows as a weed in waste ground and on old walls about Chelsea and elsewhere ; it has somewhat of the habit of Groundsel, and bears small *heads* of dingy yellow *flowers.*

34. Aster (*Starwort*).

1. *A. Tripólium* (Sea Starwort).—The only British species, abundant in salt marshes and on sea-cliffs. A stout succulent plant, 2—3 feet high, with long, smooth, fleshy *leaves,* and corymbs of large handsome *heads* of *flowers,* the inner *florets* of which are yellow, the outer purple. In salt marshes the whole plant is often covered with mud, which gives it an unsightly appearance, but

when growing on sea-cliffs, it is a highly ornamental plant.—Fl. August, September. Perennial.



ASTER TRIPÓLIUM (*Sea Starwort*).

35. SOLIDÁGO (*Golden-rod*).

S. Virgaúrea (Golden-rod).—The only British species, common in dry woods.—An erect, scarcely branched plant, 2—3 feet high, with roughish, angular *stems*, simple, serrated *leaves*, which gradually become narrower the higher they are on the stem; and conspicuous, terminal, crowded clusters of small bright yellow *flowers*.

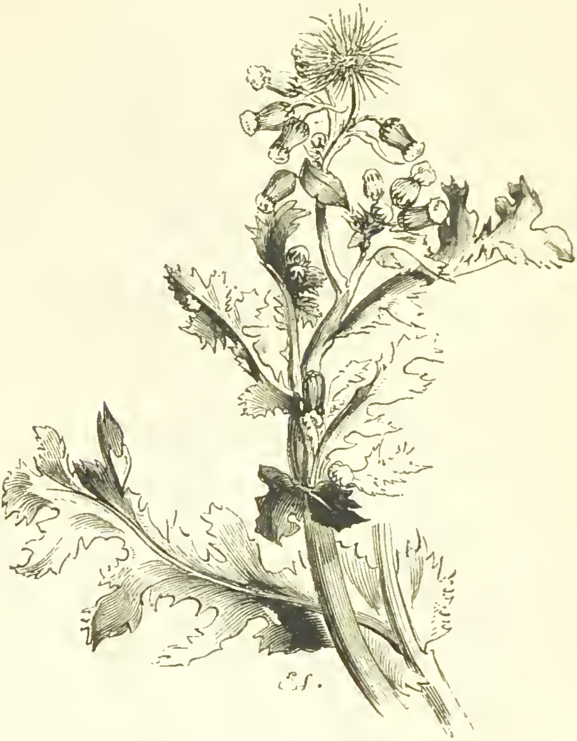
On mountainous heaths a variety occurs with very short *stems* and large *leaves* and *flowers.*—Fl. July—September. Perennial.

SOLIDÁGO VIRGAÚREA (*Golden-rod*).

36. Senécio (*Groundsel, Ragwort*).

1. *S. vulgáris* (Common Groundsel).—*Flowers* without rays, in crowded clusters; *leaves* half-embracing the stem, deeply lobed and toothed.—A common weed in

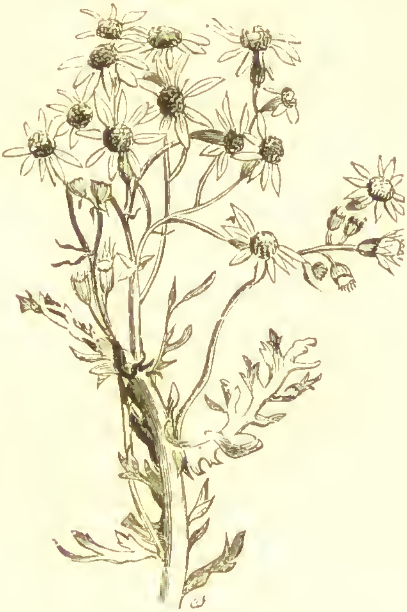
cultivated ground; a favourite food of many small birds.—Fl. all the year round. Annual.



SENÉCIO VULGÁRIS (*Common Groundsel*).

2. *S. sylváticus* (Mountain Groundsel).—*Flowers* with a few rays, which are rolled back and inconspicuous, or often wanting; *leaves* pinnatifid, with narrow lobes, toothed.—Gravelly places, common. Distinguished from the last by its larger size, its more copiously cut, often hoary *leaves*, and its conical rather than cylindrical heads of dull yellow *flowers*. The *stem* is branched, 1—2 feet high.—Fl. July—September. Annual.

3. *S. Jacobæa* (Common Ragwort).—*Flowers* with spreading rays ; leaves pinnatifid, with smaller lobes at the base.—Meadows and wet places, common.—*Stem* erect, 2—3 feet high ; *flowers* large, bright yellow, corymbose.—Fl. July—September. Perennial.



SENÉCIO JACOBÆA (*Common Ragwort*)

4. *S. aquáticus* (Marsh Ragwort).—*Flowers* with spreading rays ; *lower leaves* undivided, toothed, *upper* with a few oblong lobes near the base.—Wet places, common. Resembling the last, but readily distinguished by its less divided leaves.—Fl. July—September. Perennial.

5. *S. tenuifolius* (Hoary Ragwort).—*Flowers* with spreading rays ; *leaves* pinnatifid, with very narrow segments, downy beneath.—Dry banks in a limestone

or chalky soil, not common. Of about the same size as the last, but distinguished by its sending up numerous cottony stems from the same root, and by its regularly divided leaves, the segments of which are slightly rolled back at the edges.—Fl. July, August. Perennial.

6. *S. palustris* (Marsh Flea-wort).—Shaggy; *stem* much branched, hollow.—Fens of Norfolk and Cambridge, rare. A stout plant, 2—3 feet high, with numerous toothed leaves, which are wavy at the edges; flowers bright yellow.—Fl. June, July. Perennial.

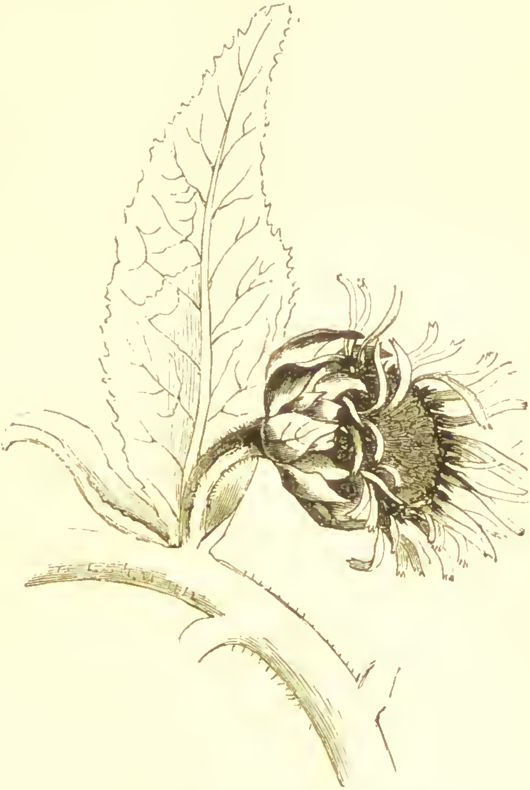
7. *S. campestris* (Field Flea-wort).—Shaggy; *stem* simple; *root-leaves* oblong, nearly entire, *stem-leaves* narrow, tapering.—Chalky downs in the east of England, not common. A small plant, 6—8 inches high, with a few small stem leaves, and umbels of yellow flowers.—Fl. May, June.

Less common species of *Senécio* are *S. viscósus* (Viscid Groundsel), which approaches *S. sylváticus* in habit, and is distinguished by its being clothed with viscid hairs: *S. squálidus* (Inelegant Ragwort), growing about a foot high, with large bright yellow flowers, abundant on old walls about Oxford, and Bideford, Devon. (Whence it derives its name is not clear, inasmuch as it is by far the prettiest British species.) *S. paludósus* (Great Fen Ragwort), a large aquatic plant, 5—6 feet high, with undivided *leaves*, grows very sparingly in the east of England: and *S. Saracénicus* (Broad-leaved Ragwort), also with undivided leaves, but much smaller than the last, is not considered to be indigenous.

37. DORÓNICUM (*Leopard's-bane*).

1. *D. Pardalianches* (Great Leopard's-bane).—*Lower leaves* heart-shaped, toothed, on long stalks, *upper* with two ears at the base, embracing the stem.—Damp hilly woods, rare, a doubtful native. Stem 2—3 feet high, erect, solitary, hollow, hairy leaves soft; heads of flowers yellow, the earlier ones overtopped by the later. —Fl. May—July. Perennial.

* *D. plantagíneum* (Plantain-leaved Leopard's-bane) differs from the last in having egg-shaped *leaves* and solitary *heads* of *flowers.* It is very rare, and is not considered to be indigenous.



INULA HELÉNIUM (*Elecampane*).

38. INULA (*Elecampane, Ploughman's Spikenard*).

1. *I. Helénium* (Elecampane).—*Leaves* oblong or egg-shaped, wrinkled, downy beneath, toothed, upper ones embracing the stem ; *scales* of the *involucre* egg-shaped,

downy.—Moist pastures, not common. A stout plant, 3—5 feet high, with very large leaves and a few terminal very large heads of bright yellow flowers. The root contains a white starchy powder, named Inuline, a volatile oil, a soft acrid resin, and a bitter extract; it is used in diseases of the chest and lungs, and furnishes the *Vin d'Aulnée* of the French.—Fl. July, August. Perennial.

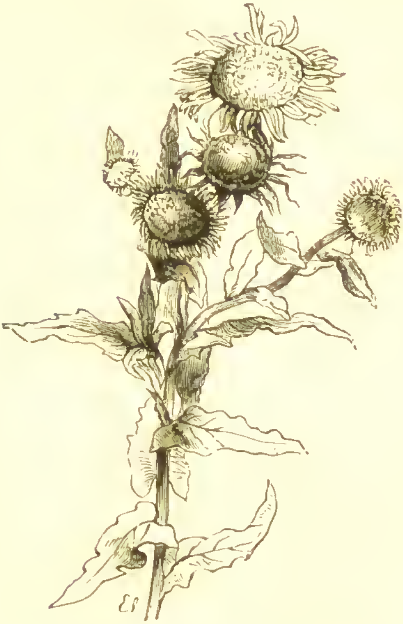
2. *I. Conýza* (Ploughman's Spikenard).—*Leaves* narrow, egg-shaped, downy, toothed; *heads* of flowers panicled; *scales* of the *involucre* rolled back.—Hedges, principally on a limestone or chalky soil, frequent. Distinguished by its dull green foliage, numerous heads of dingy yellow flowers, the rays of which are inconspicuous, and by the leaf-like scales of the *involucre,* which are rolled back.—Fl. July—September. Perennial.

3. *I. crithmoídes* (Golden Samphire).—*Leaves* very narrow, fleshy, smooth, blunt, or 3-pointed.—Salt marshes, and sea-cliffs, rare. Well distinguished from every other British plant by its fleshy leaves and large yellow flowers, which grow singly at the extremity of the branches.—Fl. July, August. Perennial.

39. PULICARIA (*Flea-bane*).

1. *P. dysentérica* (Common Flea-bane).—*Stem* woolly; *leaves* oblong, heart or arrow-shaped at the base, embracing the stem; *scales* of the *involucre* bristle-shaped. —Watery places, common; rare in Scotland. From 1—2 feet high, growing in masses, and well marked by its soft hoary foliage and large flat heads of bright yellow *flowers,* those of the ray being very numerous, narrow, and longer than the disk.—Fl. August. Perennial.

2. *P. vulgáris* (Small Flea-bane).—*Stem* hairy; *leaves* narrow, tapering, hairy.—Sandy heaths, where water



PULICARIA DYSENTÉRICA (*Common Flea-bane*).

has stood, not common ; said to be not found in Scotland or Ireland. Resembling the last, but not above half the size, nor by any means so hoary.—Fl. September. Annual.

40. BELLIS (*Daisy*).

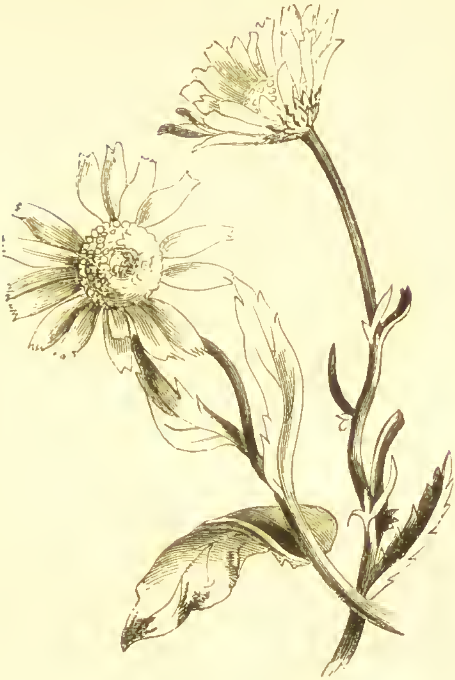
1. *B. perennis* (Common Daisy).—The only British species, too well known and admired to need any description or comment.—Fl. nearly all the year round. Perennial.

BELLIS PERENNIS (*Common Daisy*).

41. Chrysánthemum (*Ox-eye*).

1. *C. Leucánthemum* (White Ox-eye).—*Florets* of the ray white ; *lower leaves* stalked, *upper* sessile, pinnatifid at the base.—Meadows, abundant. Almost as well known as the common daisy. A great favourite of children, who string the flowers on a stout grass-straw, or bit of wire, and make a very fair imitation of the feather formerly worn by soldiers. It is said to be destructive to fleas.—Fl. June, July. Perennial.

2. *C. ségetum* (Yellow Ox-eye, Corn Marigold).—*Florets* of the ray yellow ; *leaves* clasping the stem, oblong, acute, toothed, glaucous.—Corn-fields, abundant, but local. Whole plant remarkably smooth and glaucous ; the *flowers* are large, of a brilliant yellow, and



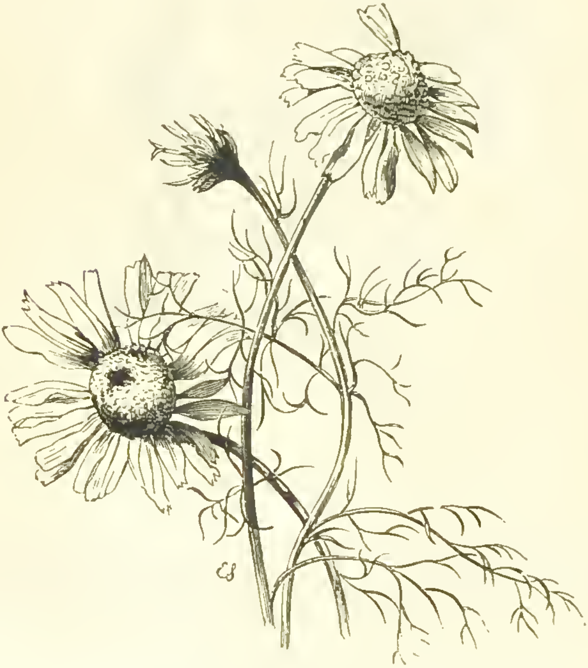
CHRYSÁNTHEMUM LEUCANTHEMUM (*White Ox-eye*).

contrast beautifully with Poppies and Blue-bottles.—Fl. June, July, and, in summer-ploughed fields, again in October and November. Annual.

42. MATRICARIA (*Wild Chamomile, Feverfew*).

1. *M. Parthénium* (Common Feverfew).—*Leaves* stalked, pinnate; *leaflets* pinnatifid, and deeply cut; *stem* erect; *flowers* corymbose.—Hedges and waste ground, common. Well marked by its repeatedly cut, curled, delicate green leaves, and its numerous small heads of flowers, of which the central ones are yellow,

the outer white. The leaves are conspicuous in mid-winter, and the whole plant has a powerful and not unpleasant odour, which is said to be particularly offensive to bees. The English name is a corruption of *Febrifuge*, from its tonic properties. This and the following are placed by some botanists in the genus *Pyréthrum.*—Fl. July, August. Perennial.



MATRICARIA INODÓRA (*Corn Feverfew, Scentless May-weed*).

2. *M. inodóra* (Corn Feverfew, Scentless May-weed). —*Leaves* sessile, repeatedly cut into numerous hair-like segments; *stem* branched, spreading; *flowers* solitary. —Corn-fields, common. Of a very different habit from

the last, but resembling it in the colour of the flowers, which are, however, much larger, and are remarkable for their very convex disk. When growing near the sea, its leaves become fleshy, when it is called *M. marítima* (Sea Feverfew).—Fl. July—October. Annual.

3. *M. Chamomilla* (Wild Chamomile).—*Leaves* smooth, cut as in the last; *involucre* nearly plane; *receptacle* hollow.—Corn-fields. It may be distinguished from *M. inodóra* and *Anthemis Cótula* by the scales of the *involucre* being not chaffy at the margin, and by the *receptacle* of the flower being hollow.—Fl. June, August. Annual.

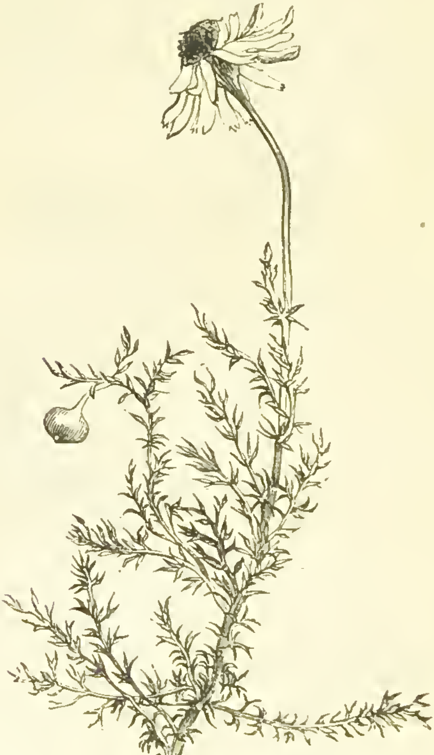
43. Ánthemis (*Chamomile*).

1. *A. nóbilis* (Common Chamomile).—*Stems* prostrate; *leaves* repeatedly cut into hair-like segments, slightly downy.—Heaths, abundant. Well distinguished by its solitary *heads* of flowers, which droop before expansion, and by its pleasant aromatic smell, which resembles that of fresh apples, whence it derived its name of *Chamomile*, signifying in Greek, *ground apple.* The whole plant is very bitter, and is valuable in medicine for its tonic properties.—Fl. August. Perennial.

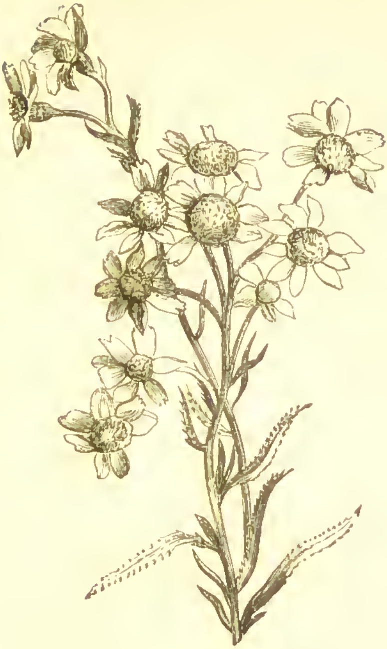
2. *A. Cótula* (Stinking Chamomile).—*Stem* erect, branched; *leaves* repeatedly cut into hair-like segments, smooth.—Waste places, common. Distinguished from the last by its strong disagreeable odour, and upright stems. The heads of flowers are solitary, coloured as in the last, but larger. The juice is very acrid, and is said to blister the hands of those who gather it.—Fl. July, August. Annual.

* Less common species of Chamomile are *A. marítima* (Sea Chamomile), which has repeatedly-cut fleshy *leaves*, which are somewhat hairy; on the sea-coast, very rare: *A. arvensis* (Corn Chamomile), the deeply cut *leaves* of which are white with down; these two have *white flowers*

with a *yellow disk:* and *A. tinctória* (Ox-eye Chamomile), which has downy, much divided leaves, and large bright yellow *flowers,* resembling those of *Chrysánthemum ségetum.*



ANTHEMIS NÓBILIS (*Common Chamomile*).



ACHILLÉA PTÁRMICA (*Sneeze-wort*).

44. ACHILLÉA (*Yarrow*).

1. *A. Millefólium* (Common Yarrow, Milfoil).—*Leaves* twice pinnatifid, woolly, or slightly hairy; *leaflets* cut into hair-like segments; *flowers* in dense terminal corymbs.—Waste ground, frequent. A common road-side plant, with very tough, angular stems, 1—2 feet high, and corymbs of small, white, pink, or purplish flowers, which, by an unpractised eye, might be supposed to belong to an umbelliferous plant. It has a strong and slightly aromatic odour, and is said to have the property of healing wounds.—Fl. June—September. Perennial.

2. *A. Ptármica* (Sneeze-wort).—*Leaves* undivided, very narrow, and tapering to a sharp point, serrated.—Meadows, and waste ground, not uncommon. Somewhat taller and slenderer than the last, from which it may be at once distinguished by its undivided leaves and larger heads of *flowers,* of which both the *disk* and *ray* are white. The pounded leaves have been used as snuff; hence its name.—Fl. July, August. Perennial.

* *A. tomentósa* (Woolly Yellow Yarrow) is very rare, and a doubtful native; its *leaves* are repeatedly divided and woolly, the flowers bright yellow.

ORD. XLVII.—CAMPANULACEÆ.—THE BELL-FLOWER TRIBE.

Calyx growing from the ovary, 5-lobed, remaining till the fruit ripens; *corolla* of one petal, rising from the mouth of the calyx, 5-lobed, regular, withering on the fruit; *stamens* equalling in number the lobes of the corolla, and alternate with them; *anthers* not united (except in *Jasioné*); *ovary* inferior, of 2, or more, many-seeded cells; *style* 1, covered with hairs; *stigma* simple, or with as many lobes as the ovary has cells; *fruit* dry, crowned by the withered calyx and corolla, splitting, or opening by valves, at the side or top; *seeds* numerous, fixed to a central column.—Herbaceous or slightly shrubby plants, with a milky bitter juice, mostly alternate leaves without stipules, and showy blue or white flowers, inhabiting principally the temperate regions of the northern hemisphere. Many species are highly ornamental, but very few are valuable either as food or medicine. The roots of *Campánula Rapúnculus,* under the name of Rampion or Ramps, were formerly cultivated in this country for the table, but are now scarcely known.

1. CAMPÁNULA (Bell-flower).—*Corolla* bell-shaped (rarely wheel-shaped), with 5 broad and shallow lobes;

filaments broad at the base; *stigma* 2—5 cleft; *capsule* 2—5 celled, opening by pores at the side, rarely near the top. (Name from the Latin *campana*, a bell.)

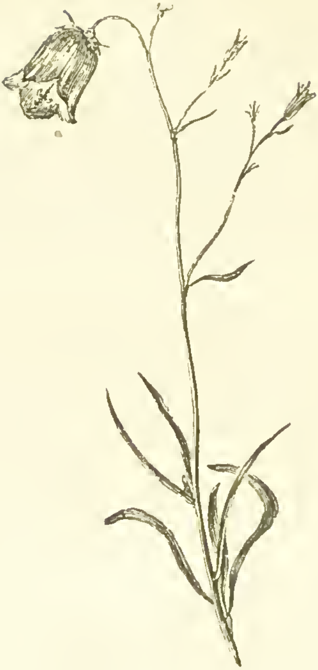
2. PHYTEUMA (Rampion).—*Corolla* wheel-shaped, with 5 deep lobes; *filaments* broad at the base; *stigma* 2—3 cleft; *capsule* 2—3 celled, bursting at the side. (Name from the Greek *phyton*, a plant.)

3. JASÍONÉ (Sheep's Scabious).—*Corolla* wheel-shaped, with 5 long narrow segments; *anthers* united at the base; *stigma* 2-cleft; *capsule* 2-celled, opening at the top; *flowers* in heads. (Name of uncertain origin.)

1. CAMPÁNULA (*Bell-flower*).

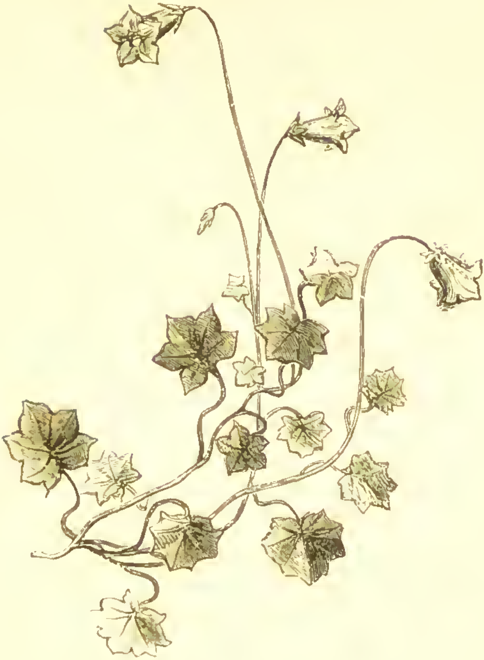
1. *C. rotundifolia* (Hair-bell).—Smooth; *root-leaves* roundish kidney-shaped, notched, stalked, very soon withering; *stem-leaves* very narrow, tapering.—Heaths and dry meadows, abundant. Flowers light blue or rarely white. The name Hair-bell is frequently, though not correctly, given to the Wild Hyacinth or Blue-bell (*Agraphis nutans*, or *Hyacinthus non-scriptus*), a plant with a thick juicy flower-stalk; but when applied to this *Campánula* is most appropriate, its stalks being exceedingly slender and wiry. The specific name, *rotundifolia* (round-leaved), is far from being descriptive of the leaves which accompany the flower, as they are long and narrow, but is peculiarly applicable to the root leaves, as they appear in winter or early spring, at which season Linnæus is reported to have observed them on the steps of the university at Upsal.—Fl. July—September. Perennial.

2. *C. Trachélium* (Nettled-leaved Bell-flower).—*Lower leaves* stalked, heart-shaped; *upper* nearly sessile, tapering to a sharp point, all strongly serrated and bristly; *flowers* in axillary clusters of 2—3.—Woods and hedges, not unfrequent. A remarkably rough plant, 2—3 feet high, with leaves very like those of the nettle, and large, deep blue, bell-shaped flowers, the stalks of which are recurved when in fruit.—Fl. July, August. Perennial.



CAMPÁNULA ROTUNDIFOLIA (*Hair-bell*).

3. *C. glomeráta* (Clustered Bell-flower).—*Stem* simple, roughish ; *leaves* oblong, tapering, crenate, rough, the lower stalked and heart-shaped at the base, the upper sessile, embracing the stem ; *flowers* sessile, in heads.—Dry pastures, not unfrequent. A stiff, erect plant, 3—18 inches high, with terminal and (in large specimens) axillary heads of deep blue, funnel-shaped, erect flowers, which have a few clasping, taper-pointed bracts at the base.—Fl. July, August. Perennial.



CAMPÁNULA HEDERÁCEA (*Ivy-leaved Bell-flower*).

4. *C. hederácea* (Ivy-leaved Bell-flower).—*Stem* straggling, thread-like; *leaves* stalked, roundish heart-shaped, angular, and toothed; *flowers* solitary, on long stalks.—Wet heaths, and by the side of streams in the south and west; very abundant in Cornwall. An exquisite little plant, generally growing with *Anagallis tenella*, and (in Cornwall) with *Sibthorpia Europæa*, plants certainly of a different habit, but scarcely less elegant than itself. The leaves are of a remarkably fine texture, and delicate green hue; the flowers of a pale blue, sometimes slightly drooping, and supported on long stalks scarcely thicker than a hair. Its usual

height is 4—6 inches; but when it grows among grass or rushes, it climbs by their help to a height of 12 inches or more.—Fl. July—September. Perennial.

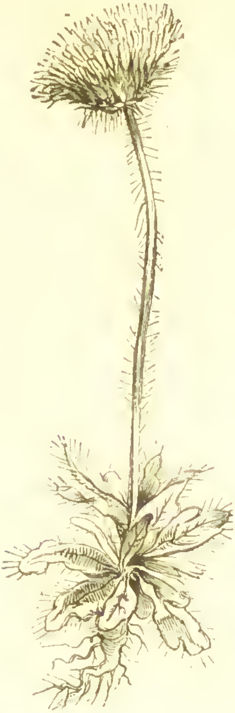
5. *C. hýbrida.*—A small plant, 4—12 inches high, with a rough wiry stem, oblong, rough, wavy *leaves*, and a few small terminal purple *flowers*, the *calyx* of which is much longer than the *corolla; corolla* wheel-shaped; *capsule* triangular, elongated.—Corn-fields, not common. By some botanists this is called *Speculária hýbrida.*—Fl. June—September. Annual.

* Less common species of *Campánula* are *C. pátula* (Spreading Bell-flower), distinguished by its rough *stem*, and loose *panicles* of wide cup-shaped *flowers* : *C. Rapúnculus* (Rampion Bell-flower), a tall species, 2—3 feet high, with clustered *panicles* of rather small, pale blue *flowers*, the *calyx* of which is divided into 5 awl-shaped segments : *C. latifolia* (Giant Bell-flower), common in woody glens in Scotland, but not frequent in England; a stout species, 3—4 feet high, with very large stalked *flowers*, which are deep blue, and hairy within : and *C. Rapunculoídes* (Creeping Bell-flower), a very rare species, distinguished by its pale blue, drooping, axillary *flowers*, which grow all on one side of the stem.—Fl. July, August. Perennial.

2. PHYTEUMA (*Rampion*).

1. *P. orbiculáré* (Round-headed Rampion).—*Flowers* in a round terminal head; *lower leaves* notched, heart-shaped, stalked; *upper* narrow, sessile.—Chalky downs, rare. A singular plant, consisting of a solitary, erect leafy stalk, 12—18 inches high, surmounted by a round head of blue flowers. The head when in fruit becomes oval.—Fl. July. Perennial.

* *P. spicatum* (Spiked Rampion) is found only in Sussex. It is much taller than the last, and bears its *flowers*, which are cream-coloured, in a terminal, oblong head.



JASIONÉ MONTÁNA (*Sheep's Scabious, Sheep's-bit*).

3. JASÍONÉ (*Sheep's Scabious*).

1. *J. montána* (Sheep's Scabious, Sheep's-bit).—The only British species.—Dry heathy places, common. Growing about a foot high, and having a strong resemblance to a Scabious, from which it may be at once distinguished by its united *anthers;* or to a Compound Flower, from which it differs in having a 2-celled capsule. The *leaves* are oblong, blunt, and hairy; the *flowers*, which are blue, grow in terminal *heads*, with a leafy *involucre* at the base. The whole plant, when bruised, has a strong and disagreeable smell.—Fl. July, August. Biennial.

ORD. XLVIII.—LOBELIACEÆ.—THE LOBELIA TRIBE.

Calyx growing from the ovary, 5-lobed, or entire; *corolla* of one petal, inserted in the calyx, 5-lobed, irregular; *stamens* equalling in number the lobes of the corolla, and alternate with them; *anthers* united; *ovary* inferior, of 1—3 many-seeded cells, opening at the top. —The plants comprised in this Order resemble in many respects the Bell-flower Tribe, from which they are mainly distinguished by their irregular corolla and united anthers. Like them, they contain a milky juice, which, however, is more acrid, and they inhabit generally warmer regions. *Lobelia inflata* (Indian Tobacco) possesses powerful medicinal properties, and when given in over-doses is poisonous. *L. cardinalis* (Scarlet Cardinal), one of our most brilliantly-coloured garden flowers, is also very acrid; and the rare British species, *L. úrens* (Acrid Lobelia), derives its name from the blistering properties of its juice. Some species contain a considerable quantity of caoutchouc.

1. LOBELIA.—*Corolla* 2-lipped, the upper part split to the base of the tube. (Name from Matthias Lobel, a Flemish botanist.)

1. LOBÉLIA.

1. *L. Dortmanna* (Water Lobelia).—*Leaves* almost cylindrical, of 2 parallel tubes.—Lakes in the north, frequent. An aquatic plant, often forming a matted bed at the bottom of the water, and sending above the surface slender, almost leafless stems having a long cluster of distant, light blue, drooping flowers.—Fl. July, August. Perennial.

* *L. úrens* (Acrid Lobelia) is a very rare species, found only near Axminster, Devon; it has a roughish leafy *stem*, which contains a milky, acrid juice, and leafy clusters of purple *flowers*.

LOBÉLIA DORTMANNA (*Water Lobelia*).

ORD. XLIX.—VACCINIACEÆ.—THE CRANBERRY TRIBE.

Calyx growing from the ovary, of 4—6 lobes, which are sometimes so shallow as to be scarcely perceptible; *corolla* of one petal, with as many lobes as the calyx; *stamens* not united, twice as many as the lobes of the corolla, inserted into the *disk* of the ovary; *anthers* opening by 2 pores, and often furnished with 2 bristles;

ovary with a flat disk, 4—10-celled; *cells* 1- or many-seeded; *style* and *stigma* simple; *fruit* a *berry* crowned by the remains of the calyx, juicy, containing many small *seeds.*—Small shrubby plants, with undivided, alternate leaves, inhabiting temperate regions, especially mountainous and marshy districts. By some botanists they are placed in the same order with the Heaths, from which they differ chiefly in having the ovary beneath the calyx. The leaves and bark are astringent, the berries slightly acrid and agreeable to the taste. Under the name of Cranberries they are imported largely from North America, and are used for making tarts. Many species are cultivated in gardens; more, however, for their pretty flowers than for the sake of their fruit.

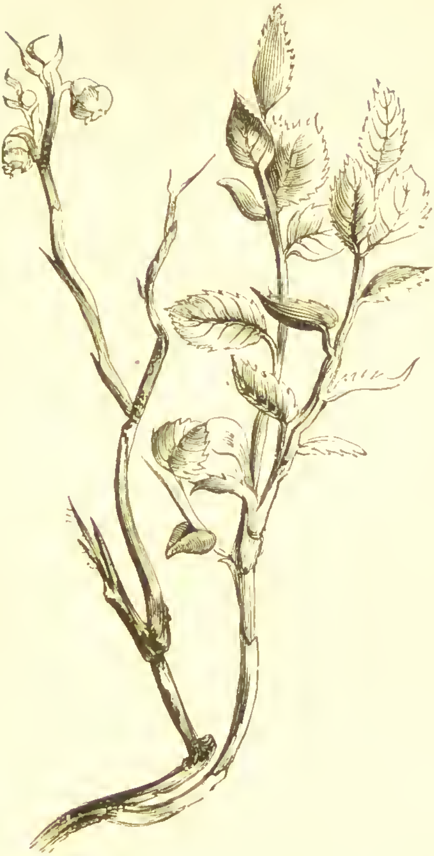
1. VACCÍNIUM (Whortleberry, Cranberry, &c.).—*Calyx* 4—5 lobed, sometimes with the lobes so shallow as to be scarcely perceptible; *corolla* bell-shaped, or wheel-shaped, 4—5 cleft; *stamens* 8—10; *berry* globose, 4—5 celled, many seeded. (Name of doubtful etymology.)

1. VACCÍNIUM (*Whortleberry, Cranberry, &c.*).

* *Leaves not evergreen; anthers with two bristles at the back.*

1. *V. Myrtillus* (Whortleberry, Bilberry, Whinberry).—*Stem* acutely angular; *leaves* egg-shaped, serrated; *flowers* solitary, drooping.—Heathy and mountainous places; abundant. A small branched shrub, 6—18 inches high, with nearly globular, flesh-coloured, wax-like *flowers*, and black *berries*, which are covered with grey bloom. They are agreeable to the taste, and are often made into tarts; but when thus used are rather mawkish unless mixed with some more acid fruit. In the west of England they are popularly known by the name of *whorts.*—Fl. May. Shrub.

2. *V. uliginosum* (Bog Whortleberry, or Great Bilberry).—*Stem* not angular; *leaves* inversely egg-shaped, entire, glaucous and veined beneath.—Mountainous bogs



VACCINIUM MYRTILLUS (*Whortleberry, Bilberry, Whinberry*).

in Scotland and the north of England. Distinguished from the last by its more woody, rounded stem, and by its strongly veined, glaucous leaves, which are broader towards the extremity. The flowers are smaller and grow nearer together.—Fl. May. Shrub.

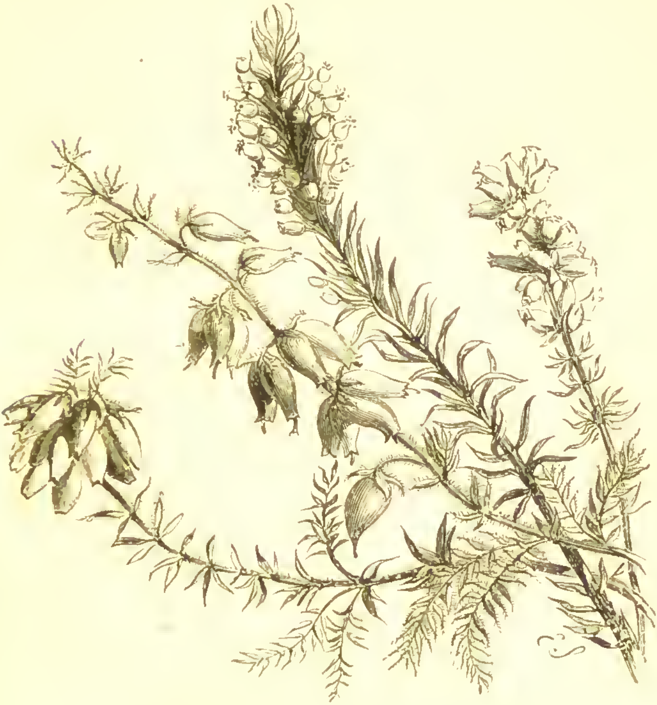
** *Leaves evergreen ; anthers without bristles.*

3. *V. Vitis Idéa* (Red Whortleberry, Cowberry).—*Leaves* inversely egg-shaped, dotted beneath, the margins rolled back ; *flowers* in terminal drooping clusters.—Mountainous heaths in the north. A low straggling shrub, with leaves resembling those of the *Box*. The flowers are pink, with 4 deep lobes ; the berries red.—Fl. May, June. Shrub.

4. *V. Oxycoccos* (Marsh Whortleberry, Cranberry).—*Stem* very slender, prostrate, rooting ; *leaves* egg-shaped, glaucous beneath, the margins rolled back ; *corolla* wheel-shaped, with 4 deep, reflexed segments.—Peat-bogs principally in the north. A very low plant, with straggling, wiry stems, and solitary terminal, bright red flowers, the segments of which are bent back in a very singular manner. "The fruit is highly agreeable, making the best of tarts ; at Langtown, on the borders of Cumberland, it forms no inconsiderable article of trade."—(*Sir W. J. Hooker.*)—Fl. June. Shrub.

ORD. L.—ERÍCACEÆ.—THE HEATH TRIBE.

Calyx 4—5 cleft, nearly equal, inferior, remaining till the fruit ripens ; *corolla* of one petal 4—5 cleft, often withering and remaining attached to the plant ; *stamens* equal in number to the segments of the corolla, or twice as many, inserted with the corolla, or only slightly attached to its base ; *anthers* hard and dry, the cells separating at one extremity, where they are furnished with bristles or some other appendage, opening by pores : *ovary* not adhering to the calyx, surrounded at the base by a *disk* or by *scales*, many-celled, many-seeded : *style*, 1, straight ; *stigma* 1 ; *fruit* a berry or dry capsule, many-seeded.—Shrubs or small bushy trees with evergreen, often rigid, opposite or whorled leaves. This well-known and highly prized Order contains a large number of beautiful plants, many of which are remarkable for their social nature; extensive tracts of country being often found entirely covered with a few species, so as to give name to the kinds of places on which they grow. They are most abundant in the neighbourhood of the Cape of Good Hope; hence they are often called by gardeners, "Cape plants." They are common also in Europe, in North and South America, both within and without the tropics, and in the mountainous parts of Asia. The extensive genus *Eríca* (Heath) contains no plant possessing useful properties. *Callúna vulgáris* (Ling, or Heather) is astringent, and is sometimes used



ERÍCA TÉTRALIX, E. CILIÁRIS, E. VAGANS, *and* E. CINÉREA.

for dyeing; its tough branches are a common material for brooms; its flowers are the favourite resort of bees, and its seeds are said to enter largely into the food of moor-fowl. Of the plants belonging to the order, which produce juicy berries, the fruit is in some instances edible. *Árbutus Únedo* bears an abundance of handsome berries, which when thoroughly ripe are not unpalatable; and which, from the resemblance they outwardly bear to strawberries, give the plant its English name, Strawberry-tree. Some species, especially of *Kálmia* and *Rhododendron*, possess dangerous narcotic properties, which extend to the flesh of animals that have fed on them. It is stated that the honey which poisoned the Grecian troops during the famous Retreat of the 10,000, had been collected by bees from the flowers of some plant of this order; and that the honey still found on the shores of the Euxine, or Black Sea, possesses the same properties. The berries of some species are, nevertheless, used in medicine with good effect.

1. Eríca (Heath).—*Calyx* deeply 4-cleft; *corolla* bell-shaped, or egg-shaped, 4-cleft; *stamens* 8; *capsule* 4-celled. (Name from the Greek, *eríco,* to break, from some fancied medicinal properties.)

2. Callúna (Ling, Heather).—*Calyx* of 4 coloured sepals, which are longer than the corolla, having at the base outside 4 green *bracts; corolla* bell-shaped: *stamens* 8; *capsule* 4-celled. (Name from the Greek, *callúno,* to cleanse, from the frequent use to which its twigs are applied, of being made into brooms.)

3. Menziesia.—*Calyx* deeply 4—5 cleft: *corolla* inflated; *stamens* 8—10; *capsule* 4—5 celled. (Named in honour of *Archibald Menzies,* an eminent Scotch botanist.)

4. Azálea.—*Calyx* deeply 5-cleft; *corolla* bell-shaped, 5-cleft; *stamens* 5: *anthers* bursting lengthways: *capsule* 2—3 celled, and valved. (Name from the Greek *azáleos,* parched, from the nature of the places in which it grows.)

5. Andrómeda.—*Calyx* deeply 5-cleft; *corolla* egg-shaped, with a 5-cleft reflexed border; *stamens* 10; *anthers* with two bristles at the back; *capsule* dry, 5-celled, and 5-valved. ("Named in allusion to the fable of *Andrómeda*, who was chained to a rock, and exposed to the attack of a sea-monster: so does this beautiful tribe of plants grow in dreary and northern wastes, feigned to be the abode of preternatural monsters."—*Sir W. J. Hooker.*)

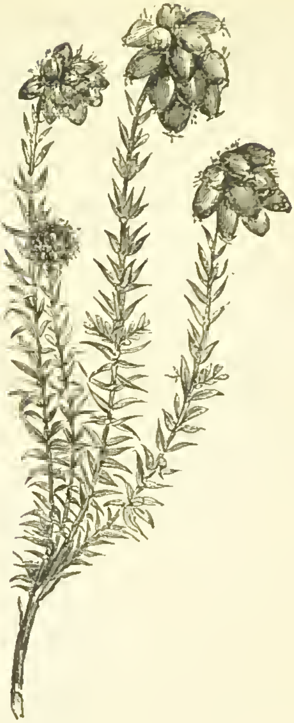
6. Árbutus (Strawberry-tree).—*Calyx* deeply 5-cleft; *corolla* egg-shaped, with a 5-cleft reflexed border; *stamens* 10; *fruit* fleshy, rough, 5-celled; *cells* many-seeded. (Name, the Latin name of the plant.)

7. Arctostáphylos (Bear-berry).—*Calyx* deeply 5-cleft; *corolla* egg-shaped, with a 5-cleft reflexed border; *stamens* 10; *fruit* fleshy, smooth, 5-celled; *cells* 1-seeded. (Name in Greek denoting *Bear's grape.*)

1. Eríca (*Heath*).

1. *E. Tétralix* (Cross-leaved Heath).—*Leaves* 4 in a whorl, narrow, fringed; *flowers* in 1-sided terminal heads.—Peaty moors; abundant; well distinguished from all other English species by its leaves being placed cross-wise, and by its terminal heads of drooping, rose-coloured flowers, which are all turned to the same side, and are of a larger size than the other common species, *E. cinérea.* The part of the flower nearest the stem is of a lighter colour than that which is exposed, where it deepens to a delicate blush; the whole flower appearing as if it had been modelled in wax. It is sometimes found of a pure white.—Fl. July, August, with occasional blooms throughout the autumn. Shrub.

2. *E. cinérea* (Fine-leaved Heath).—*Leaves* in threes, very narrow, smooth; *flowers* egg-shaped, in irregular, whorled, leafy clusters.—Heaths; abundant. This and the preceding are the only *Heaths* which can be called common. It is a bushy plant, with tough, wiry stems, exceedingly narrow leaves, and numerous oblong, pur-



ERÍCA TÉTRALIX (*Cross-leaved Heath*).

ple flowers, which form broken, leafy clusters, not confined to one side of the stem. The flowers are sometimes white.—Fl. July, August. Shrub.

3. *E. vagans* (Cornish Heath).—*Leaves* 3—5 in a whorl, crowded, very narrow, smooth; *flowers* bell-shaped, shorter than the stamens, forming a leafy, regular, tapering cluster.—Heaths on the southern promontory of Cornwall, very abundant; found also in one or two other places in Cornwall, and on the coast of Waterford. Stems much branched, and, in the upper parts, very leafy, 2—4 feet high: flowers light purple,

ERÍCA VAGANS (*Cornish Heath*).

rose-coloured, or pure white. In the purple variety the anthers are dark purple; in the white, bright red; and in all cases they form a ring outside the corolla until they have shed their pollen, when they droop to the sides. On the Goonhilley Downs, in Cornwall, all three varieties of this Heath grow together in the greatest profusion, covering many thousands of acres, and almost excluding the two species so common elsewhere.—Fl. July—September. Shrub.

* Less common species of Heath are *E. Mackaií* (Mackay's Heath), approaching closely to *E. Tétralix,*

but growing in a more bushy manner, with broader *leaves*, and more numerous heads of smaller *flowers*. Cunnemara, Ireland. *E. Mediterránea* (Mediterranean Heath), well known as a garden plant, but found, also, in Cunnemara, well marked by its coloured calyx ; and *E. ciliáris* (Ciliated Heath), by far the most beautiful of all the British species ; the *leaves* are 4 in a whorl, and the *flowers*, which are bright purple and half an inch long, grow in terminal, interrupted, spike-like clusters. It is found only near Cape Castle, Dorset, and in Cornwall, where, though of local occurrence, it is occasionally as abundant as *E. cinérea* is elsewhere.

2. CALLÚNA (*Ling, Heather*).

1. *C. vulgáris* (Ling, or Heather).—The only species. Heaths and moors ; most abundant. This was placed by Linnæus in the genus *Eríca* (Heath) ; later botanists have, however, made of it a distinct genus, and not without reason. The leaves are very small, more or less downy (sometimes even hoary), and arranged in 4 rows, on opposite sides of the stem. The *corolla* is very small, and bell-shaped, and is concealed by the rose-coloured leaves of the *calyx*, outside which are 4 small green *bracts*, which appear to form a second *calyx*. The flowers remain attached to the plant long after the seed is ripe ; indeed, it is not at all unusual to find plants in full bloom with the withered flowers of the preceding year still adhering to the lower part of the stem. A beautiful variety has been found in Cornwall, with double flowers.—Fl. July, August. Shrub

3. MENZIESIA.

1. *M. cærúlea* (Scotch Menziesia).—*Leaves* numerous, linear, minutely toothed ; *flower-stalks* covered with glandular hairs ; *flowers* in terminal tufts ; *corolla* 5-cleft ; *stamens* 10.—Very rare ; found on the "Sow

CALLÚNA VULGARIS (*Ling, or Heather*).

of Athol," in Perthshire, but "nearly, if not quite extirpated by an Edinburgh nurseryman."—*Babington.* A small shrubby plant, naked below, very leafy and hairy above, with large, pale purplish-blue flowers.—Fl. June, July. Shrub.

2. *M. polifólia* (Irish Menziesia, or St. Dabeoc's Heath).—*Leaves* egg-shaped, with the margins rolled back, white, and downy beneath ; *corolla* 4-cleft ; *stamens* 8.—Mountainous heaths in Ireland ; rare. A small

shrub, with large, purple, sometimes white flowers, which grow in terminal, leafy, 1-sided clusters.—Fl. June, July. Shrub.

4. Azálea.

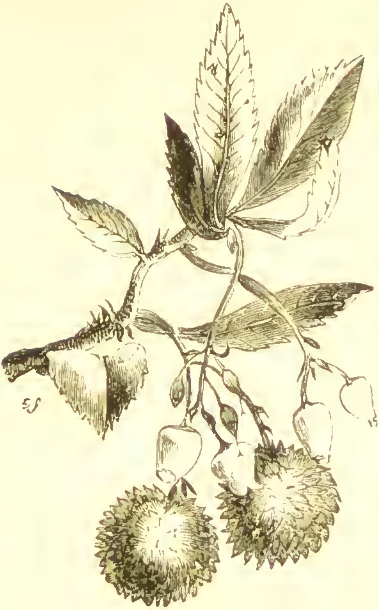
1. *A. procumbens* (Trailing Azalea).—A low trailing shrub, of a very different habit from most of the garden plants cultivated under the name of *Azaleas.* The *stems* are prostrate and tangled; the *leaves* small, smooth, and rigid, with the margins remarkably rolled back; the *flowers* are flesh-coloured, and grow in short terminal clusters, or tufts. Highland mountains.—Fl. May, June. Shrub.

5. Andrómeda.

1. *A. polifolia* (Marsh Andrómeda).—The only British species, growing in peat bogs in the north. A small, leafy, evergreen shrub, with slender *stems,* narrow, pointed *leaves,* and terminal tufts of flesh-coloured, drooping *flowers.*—Fl. June—August. Shrub.

6. Árbutus (*Strawberry-tree*).

1. *Á. Únedo* (Strawberry-tree).—*Leaves* elliptical, tapering, serrated, smooth; *flowers* in drooping panicles; *fruit* rough.—Abundant about the lakes of Killarney, in a wild state, and very common in English gardens. A beautiful evergreen tree, with a rough, reddish bark, large deep-green leaves, and numerous terminal clusters of greenish-white *flowers.* The *berries,* which ripen in the following autumn, are nearly globular, scarlet, and rough with minute, hard grains. They are eatable, but so much less attractive to the taste than to the eye, as to have originated the name, "Unedo," "One-I-eat;" as if no one would choose to try a second. The flowers are in full perfection at the time when the fruit, formed in the preceding year, is ripening; and then of course, the tree presents its most beautiful appearance.—Fl. September, October. Tree.



ÁRBUTUS ÚNEDO (*Strawberry-tree*).

7. ARCTOSTÁPHYLOS (*Bear-berry*).

1. *A. Uva-Ursi* (Red Bear-berry).—*Stems* prostrate; *leaves* inversely egg-shaped, entire, evergreen; *flowers* in terminal clusters.—Mountainous heaths in the north; abundant. A small shrub, distinguished by its long trailing *stems*, blunt *leaves*, which turn red in autumn, rose-coloured *flowers*, and scarlet *berries*, which are a favourite food of moor fowl. The leaves are used in medicine as an astringent.—Fl. May. Shrub.

* *A. alpína* (Black Bear-berry) resembles the last in its mode of growth, but the *leaves* are wrinkled and serrated, and not evergreen; the *flowers* are white, with a purplish tinge; the *berries* black. It is most common on mountains in the north of Scotland.

ORD. LI.—MONOTROPACEÆ.—THE BIRD'S-NEST TRIBE.

Sepals 4—5, not falling off; *corolla* regular, deeply divided into as many lobes or petals as there are sepals; *stamens* twice as many as the lobes of the corolla; *anthers* opening by pores; *ovary* 4—5 celled, sometimes imperfectly so; *style* 1, often bent; *stigma* generally lobed; *fruit* a dry capsule; *seeds* covered with a loose skin.—A small and unimportant Order, containing but two British genera, *Pýrola*, a family of plants with somewhat shrubby, unbranched *stems;* simple, smooth, veiny evergreen *leaves*, and large, often fragrant, *flowers*, which grow either singly or in a stalked terminal *cluster:* and *Monótropa*, a leafless parasitie plant, with the habit of an *Orobanché* (Broom-rape), growing on the roots of Firs, and other trees.

1. PÝROLA (Winter-green).—*Sepals* 5; *corolla* of 5 deep lobes or petals; *stamens* 10; *anthers* 2-celled; *stigma* 5-lobed. (Name signifying *a little Pear*, from the fancied resemblance between its leaves and those of that tree.)

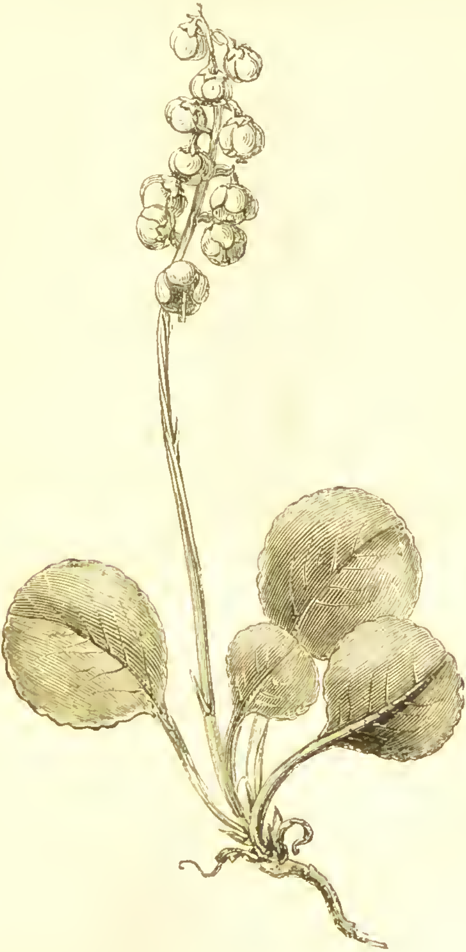
2. MONÓTROPA (Bird's-nest).—*Sepals* 4—5; *petals* 4—5, swollen at the base; *stamens* 8—10: *anthers* 1-celled; *stigma* flat, not lobed. (Name from the Greek *monos*, one, and *trepo*, to turn, the flowers being turned all one way.)

1. PÝROLA (*Winter-green*).

1. *P. uniflóra.* (Single-flowered Winter-green).—*Leaves* nearly round; *flower* solitary, drooping.—Mountainous woods in Scotland; rare. A remarkably pretty plant, bearing several roundish, egg-shaped, smooth, and veiny leaves, and running up into a single flower-stalk, which bears one large, elegant, white, highly fragrant flower.—Fl. July. Perennial.

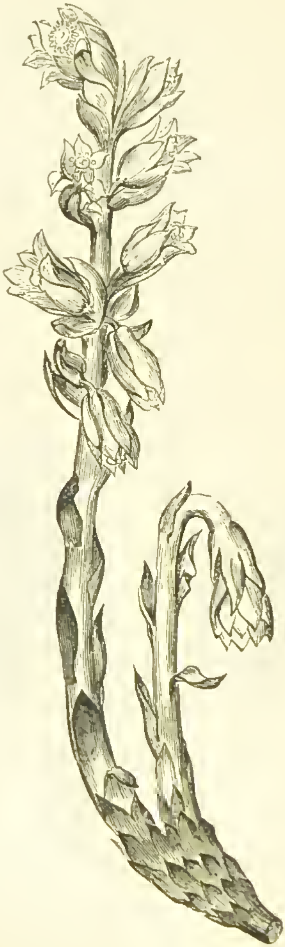
* The other species of Winter-green, which bear each

a terminal cluster of drooping flowers, are *P. secúnda,* in which all the flowers lean one way; *P. minor,* distinguished by its large stigma, which is included within the flower; these are found only in North Britain.



PÝROLA MÉDIA.

P. rotundifólia is marked by its long style bent down, and, at the extremity, curved upwards; this is found in bushy places in Norfolk, Suffolk, and Kent, very



MONÓTROPA HYPÓPITYS (*Pine Bird's-nest, Fir-rape*).

rare. *P. média* has an erect, nearly-straight style much longer than the stamens; this is very common in Scotland, and has also been found in Oxfordshire.

2. MONÓTROPA (*Bird's-nest*).

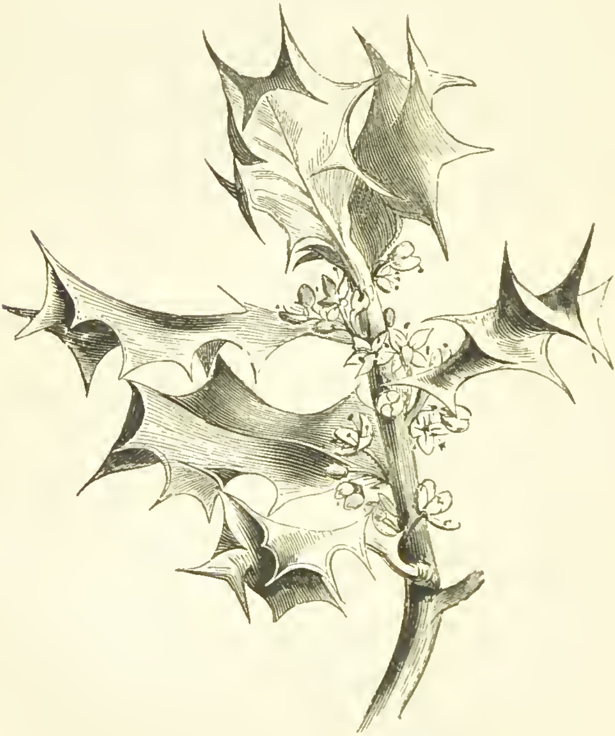
1. *M. Hypópitys* (Pine Bird's-nest, Fir-rape).—The only British species, occurring sparingly in dry woods of Fir and Beech, on the roots of which trees it is said by some to be parasitical. The whole plant consists of a single juicy stalk, without leaves, but clothed throughout with scaly *bracts*, and terminating in a drooping cluster of brownish yellow *flowers*, which eventually turn almost black. This must not be confounded with the plants of the genus *Orobanché*, which all have a ringent corolla of 1 petal, and four stamens, two of which are shorter than the others. The flowers of *Monótropa* have 8 stamens, with the exception of the terminal one, which has 10.—Fl. June, July. Perennial.

ORD. LII.—AQUIFOLIACEÆ.—THE HOLLY TRIBE.

Sepals 4—6, imbricated when in bud; *corolla* 4—6-lobed, imbricated when in bud; *stamens* inserted into the corolla, equalling its lobes in number, and alternate with them: *filaments* erect; *anthers* 2-celled, opening lengthwise; *ovary* fleshy, abrupt, 2—6-celled; *stigma* nearly sessile, lobed; *fruit* a fleshy berry, not bursting, containing 2—6 bony seeds.—Evergreen trees or shrubs, with tough leaves, and small axillary, white or greenish flowers, occurring in various parts of the world; the only European species being the common Holly. Nearly all the plants of this tribe possess astringent and tonic properties. The leaves of the Holly, for instance, are said to be equal to Peruvian bark in the cure of intermittent fever. The berries are, undoubtedly, poisonous.

The bark furnishes bird-lime, and the wood, which is white, and remarkably close grained, is much used by cabinet-makers in inlaying. *I. Paraguayensis* furnishes *Maté*, or Paraguay Tea, which is so extensively used in Brazil and other parts of South America; for a full account of which, see *Forest Trees of Britain*, vol. ii.

1. ILEX (Holly).—*Calyx* 4—5-cleft; *corolla* wheel-shaped, 4—5-cleft; *stamens* 4—5; *stigmas* 4—5; *berry* round, containing 4—5 bony seeds. (Name applied by the Latins to some tree, though not our Holly.)



ILEX AQUIFOLIUM (*Holly*).

1. ILEX (*Holly*).

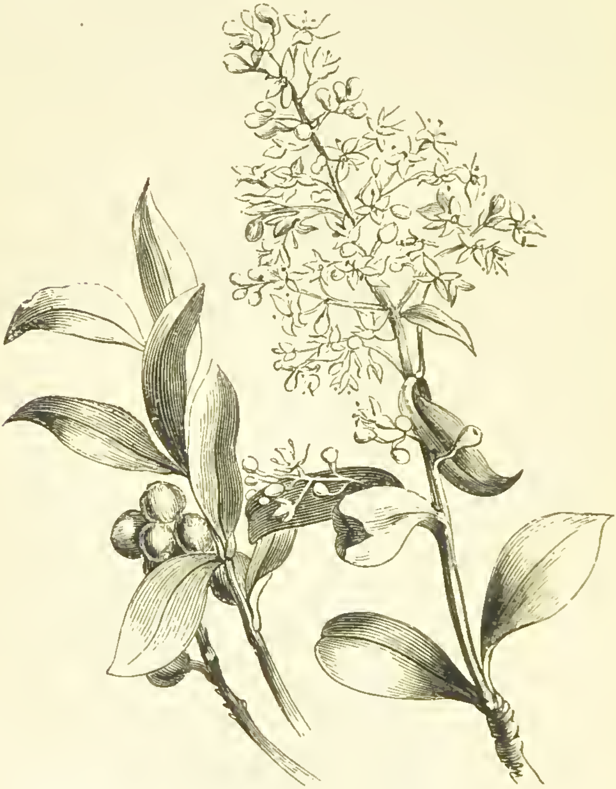
1. *I. Aquifolium* (Holly).—The only British species, for a full account of which see *Forest Trees of Britain*, vol. ii. The name *Aquifolium* means *needle-leaved*. Holly is a corruption of the word "holy," from the use to which its boughs are applied in ornamenting churches at Christmas. *The berries, it should be borne in mind, are* POISONOUS.—Fl. May, June. Tree.

ORD. LIII.—OLEÁCEÆ.—THE OLIVE TRIBE.

Calyx divided, not falling off; *corolla* of 1 petal, 4 – 8-cleft, sometimes wanting; *stamens* 2, alternate with the lobes of the corolla; *ovary* 2-celled; *cells* 2-seeded; *style* 1; *fruit* a berry, drupe, or capsule, of 2 cells, each cell often perfecting only a single seed.—Trees, or shrubs, the branches of which often end in conspicuous buds; the leaves are opposite, either simple or pinnate: the flowers grow in clusters, or panicles. The plants of this Order inhabit the temperate regions of many parts of the world. By far the most important among them is the plant from which the Order takes its name, *Ólea*, the Olive, among the earliest of plants cultivated by man. The bark of the olive is bitter and astringent, the wood remarkably close grained and durable. The fruit is a *drupe*, or hard bony seed, enclosed in a fleshy, closely-fitting case. From this outer coat, and not from the seed itself, oil is obtained by pressure. Several kinds of ash (*Fráxinus* and *Ornus*) produce manna, and are valued for the strength and elasticity of their timber. (For a more detailed account of the Ash, see *Forest Trees of Britain.*)

1. LIGUSTRUM (Privet).—*Corolla* funnel-shaped, 4-cleft; *calyx* with 4 small teeth; *fruit* a 2-celled berry. (Name from the Latin name of the plant, and that from *ligo*, to bind, from the use made of its twigs.)

2. FRÁXINUS (Ash).—*Calyx* 4-cleft, or 0 ; *corolla* 0 ; *fruit* a winged 2-celled capsule. (Name, the Latin name of the tree, denoting the ease with which it may be split.)

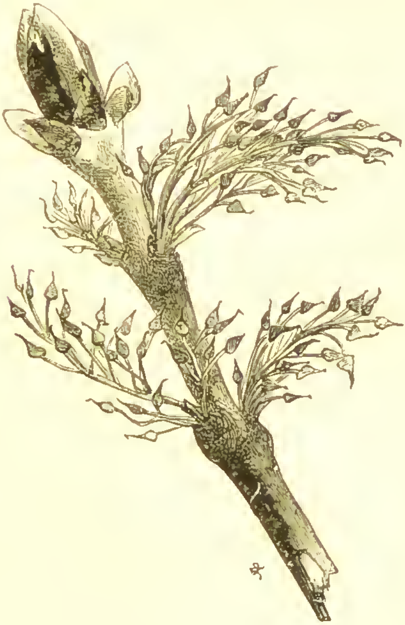


LIGUSTRUM VULGÁRÉ (*Privet*).

1. LIGUSTRUM (*Privet*).

1. *L. vulgáré* (Privet).—The only British species.—A common hedge-bush, with opposite, narrow-elliptical,

evergreen *leaves,* dense panicles of white, sickly-smelling *flowers,* and black, shining *berries,* about the size of currants. It is much used for hedges, especially in conjunction with White-thorn, over which it has the advantage of being a rapid grower. It is commonly planted to form divisions in town gardens, not being liable to be injured by smoke.—Fl. May, June. Shrub.



FRÁXINUS EXCELSIOR (*Ash*).

2. Fráxinus (*Ash*).

1. *F. excelsior* (Ash).—*Calyx* and *corolla* both wanting; *leaves* pinnate, with an odd leaflet.—Woods and hedges; common. A noble tree, characterised by the light ash-coloured, smooth bark of its younger branches, of which the lower ones droop, and curve upwards again at the extremities; by its large, black, terminal buds, the twigs supporting which are flattened at the end, and by its gracefully-feathered foliage. The tufts of seed-vessels, popularly called "keys," remain attached to the tree until the succeeding spring. A variety is occasionally found with undivided leaves, but it is not so handsome as the common form of the tree.—Fl. April and May, forming, at first, fruit-like, terminal heads, and finally, loose panicles. Tree.

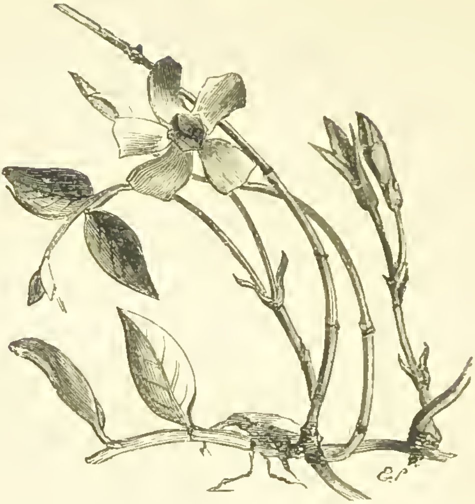
Ord. LIV.—APOCÝNACEÆ.—Periwinkle Tribe.

Calyx deeply 5-cleft, not falling off; *corolla* regular, 5-lobed, the lobes twisted when in bud, and when expanded having the sides of the margin unequally curved; *stamens* 5, inserted in the tube of the corolla; *anthers* distinctly 2-celled; *pollen* large; *ovary* 2-celled, or double; *pistil* resembling the shaft of a pillar with a double capital; *fruit* various.—Trees, shrubs, or herbaceous plants, with showy flowers, remarkable for the twisted lobes of the corolla when in bud, and yet more so for the symmetrical pistil. Many of them abound in a milky juice, and a large portion are poisonous. *Tanghínia venenífera* is the most deadly of known vegetable poisons, a single seed, though not larger than an almond, being sufficient to destroy twenty people. (For an account of the horrible use to which it was formerly applied in Madagascar, see *Wonders of the Vegetable Kingdom.* The beautiful *Oleander* (Nerium Oleander) a common greenhouse shrub, is also a formidable poison the powdered wood of which is used to destroy rats. In 1809, when the French troops were lying before Madrid, some of the soldiers went out marauding, every one bringing back such provisions as could be found. One soldier formed the unfortunate idea of cutting the branches of the Oleander for spits and skewers for the meat when roasting. This tree, it may be observed, is very common in Spain, where it attains considerable dimensions. The wood having been stripped of its bark, and brought in contact with the meat, was productive of most direful consequences; for of twelve soldiers who ate of the roast, seven died, and the other five were dangerously ill. Some species, in which the characteristic properties are moderated, are, however, used as medicines. The tree called Hya-Hya by the natives of tropical America is one of the *Cow-trees*, which derive their name from the large quantity of sweet and wholesome milk afforded by their branches. Several species furnish caoutchouc, or India-rubber, of good quality. The only British plants of this Order are the two periwinkles, which are astringent and acrid.

1. VINCA (Periwinkle).—*Corolla* salver-shaped, with 5 angles at the mouth of the tube, 5-lobed, the lobes oblique; *fruit* consisting of two erect horn-like capsules which do not burst. (Name from the Latin *vincio*, to bind, from the cord-like stems.)

VINCA (*Periwinkle*).

1. *V. major* (Greater Periwinkle).—*Stem* nearly erect; *leaves* egg-shaped, with the margins minutely fringed.—A doubtful native, being found only in the neighbourhood of dwelling-houses. A handsome plant, with large, deep-green leaves, which are smooth, except at the margins; and large, purplish-blue flowers, the mouth of which is angular, and the tube closed with hairs and the curiously curved anthers. The pistil of this flower, as well as of the following species, is a singularly beautiful object.—Fl. May—July. Perennial.



VINCA MÍNOR (*Lesser Periwinkle*).

2. *V. mínor* (Lesser Periwinkle).—*Stem* trailing, sending up short, erect, leafy shoots, which bear the flowers; margins of the *leaves* not fringed.—Woods, especially in the West of England, where it often entirely covers the ground with its evergreen leaves. It is much smaller than the last. A white variety occurs in Devonshire, and in gardens it is often met with bearing variegated leaves and double purple, blue, or white flowers.—Fl. March—June. Perennial.

ORD. LV.—GENTIANACEÆ.—THE GENTIAN TRIBE.

Calyx usually 5-, sometimes 4—8-cleft, not falling off; *corolla* of one petal, its lobes equalling in number those of the calyx, not falling off, twisted when in bud, often fringed about the mouth of the tube; *stamens* equalling in number the lobes of the corolla, and alternate with them; *ovary* of 2 carpels, 1- or imperfectly

2-celled; *style* 1; *stigmas* 2; *fruit* a many-seeded capsule or berry.—Mostly herbaceous plants, with opposite, generally sessile, leaves, and often large, brilliantly coloured flowers. This is an extensive Order, containing about 450 species, which are distributed throughout all climates, from the regions of perpetual snow to the hottest regions of South America and India. Though able to bear the most intense cold, they are very rare both in the Arctic and Antarctic regions. Under the equator, the lowest elevation at which they have been found is 7,852 feet: on the Himalaya range, one species has been found at a height of 16,000 feet; another in Ceylon at 8,000 feet: in southern Europe, one species, *Gentiana prostrata,* flourishes at between 6,000 and 9,000 feet; the same species occurs in the Rocky Mountains of America at an elevation of 16,000 feet, and in the Straits of Magellan and Behring's Straits, just above the level of the sea. In South America and New Zealand, the prevailing colour of the flower is red; in Europe, blue; yellow and white being of rare occurrence. All the known species are remarkable for the intensely bitter properties residing in every part of the herbage, hence they are valuable tonic medicines. That most commonly used in Europe is *Gentiána lútea* (Yellow Gentian); but there is little doubt that other species might be employed with equally good effect.

1. GENTIÁNA (Gentian).—*Calyx* 4—5-cleft; *corolla* funnel or salver-shaped; *stamens* 5, rarely 4; *stigmas* 2. (Name from *Gentius,* an ancient king of Illyria, who discovered its medicinal value.)

2. ERYTHRÆA (Centaury).—*Calyx* 5-cleft; *corolla* funnel-shaped, 5-cleft, not falling off; *stamens* 5; *anthers* becoming spirally twisted; *stigmas* 2; *capsule* nearly cylindrical, imperfectly 2-celled. (Name from the Greek *erythros,* red, from the colour of the flowers.)

3. CICENDIA (Gentianella).—*Calyx* 4-cleft, tubular; *corolla* funnel-shaped, 4-cleft; *stamens* 4; *anthers* not twisted; *stigma* undivided. (Name, according to Hooker

and Arnott, from the Greek *cicinnus,* curled hair; but, if so, particularly inappropriate to the only British species, which is singularly rigid.)

4. CHLORA (Yellow-wort).—*Calyx* deeply 8-cleft; *corolla* with a very short tube, 8-cleft; *stamens* 8; *stigma* 2—4-cleft. (Name from the Greek *chloros,* yellow, from the colour of the flowers.)

5. MENYANTHES (Buck-bean).—*Calyx* deeply 5-cleft; *corolla* funnel-shaped, with 5 lobes, fringed all over the inner surface; *stamens* 5; *stigma* 2-lobed. (Name of doubtful origin.)

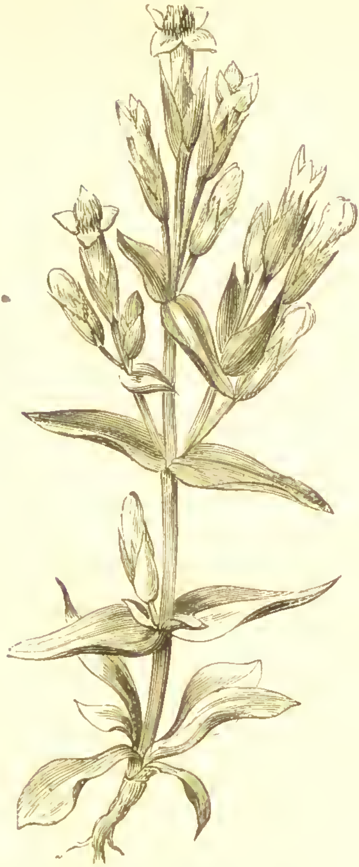
6. VILLÁRSIA.—*Calyx* deeply 5-cleft, *corolla* wheel-shaped, with 5 lobes, which are fringed only at the base; *stamens* 5; *stigma* with 2 toothed lobes. (Name in honour of M. de Villars, a French botanist.)

1. GENTIÁNA (*Gentian*).

1. *G. Amarella* (Autumnal Gentian).—*Stem* erect, branched, many-flowered; *calyx* 5-cleft; *corolla* salver-shaped, 5-cleft, fringed in the throat.—Dry chalky pastures, not common. A remarkably erect plant, with a square, leafy, purplish stem, 6—12 inches high, and numerous, rather large, purplish-blue flowers, which only expand in bright sunshine.—Fl. August, September. Annual.

2. *G. campestris* (Field Gentian).—*Stem* erect, branched, many-flowered; *calyx* 4-cleft, the two outer lobes much larger; *corolla* salver-shaped, 4-cleft, fringed in the throat.—Dry pastures, common. Resembling the last in habit, but at once distinguished by its 4-cleft flowers, which are of a dull purplish colour.—Fl. August, September. Annual.

3. *G. Pneumonanthé* (Marsh Gentian).—*Stem* erect, few-flowered; *calyx* 5-cleft; *corolla* between bell and funnel-shaped, 5-cleft, not fringed.—Boggy heaths, rare. Well distinguished from the preceding by its large, bell-shaped, deep blue flowers with 5 green stripes. There



GENTIÁNA CAMPESTRIS (*Field Gentian*).

are rarely more than 1 or 2 flowers on the same stalk.—Fl. August, September. Annual.

* *G. verna* (Spring Gentian) is a very rare species, having on each stem a single large, intensely blue *flower*, which is 5-cleft and has between the lobes 5 smaller 2-cleft segments; it has been found only in one or two

places in Ireland, and at Teesdale, Durham. *G. nivális* (Small Alpine Gentian) is also very rare, occurring only on the summits of the Highland mountains: the flowers grow several on a stem, and in colour and shape resemble the last.

ERYTHRÆA CENTAURIUM (*Common Centaury*).

2. Erythræa (*Centaury*).

1. *E. Centaurium* (Common Centaury).—A pretty herbaceous plant, 2—18 inches high, with square erect stems, which are much branched above, and terminate in variously divided flat tufts of small rose-coloured flowers; the *leaves* are oblong, with strong parallel ribs, and remarkably smooth; the *flowers* only expand in fine weather.—This is the common form of the plant as it occurs in dry fields and waste places. In other situa-

tions it varies so greatly, that some botanists enumerate several distinct species, namely: *E. pulchella* (Dwarf Centaury), a minute plant, 2—8 inches high, with an exceedingly slender *stem*, and a few stalked *flowers* (often only one); this is found on the sandy sea-shore, especially in the West of England: *E. littorális* (Dwarf Tufted Centaury), a stunted plant, with broad *leaves*, and all the *flowers* crowded into a kind of head; this occurs on turfy sea-cliffs: and *E. latifolia* (Broad-leaved Centaury), which has even broader *leaves* than the last, and bears its *flowers* in forked tufts, the main *stem* being divided into three branches. There are other minute differences, for which the student may consult more scientific works. The genus was formerly called *Chirónia*, from the Centaur, *Chiron*, who was famous in Greek mythology for his skill in medicinal herbs. The English name, Centaury, has the same origin.—Fl. July, August. Annual.

CICÉNDIA FILIFÓRMIS (*Least Gentianella*).

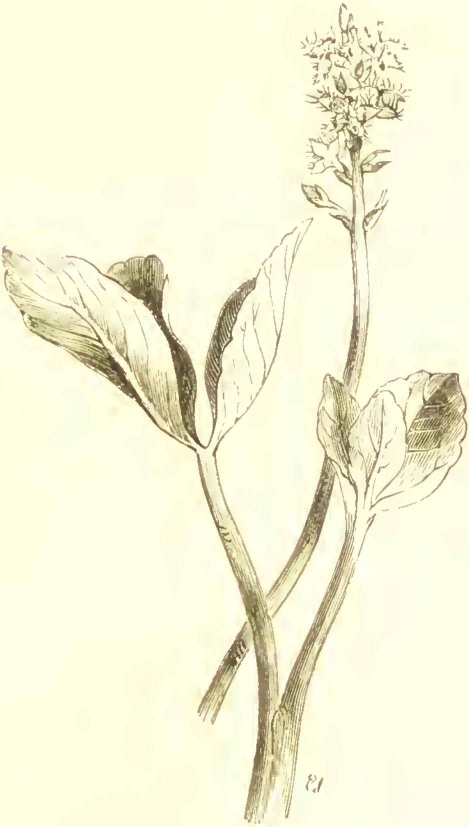
3. Cicéndia (*Gentianella*).

1. *C. filifórmis* (Least Gentianella).—The only British species. A minute, slender plant, in habit resembling *Erythræa pulchella,* and growing to about the same size, 2—4 inches ; the *leaves* are very narrow, and soon wither ; the *flowers* are yellow, and expand only in bright sunshine.—It grows in sandy heaths where water has stood during the winter. It is described by some authors under the name of *Exácum filiforme.*—Fl. July. Annual.

CHLORA PERFOLIATA (*Perfoliate Yellow-wort*)

4. Chlora (*Yellow-wort*).

1. *C. perfoliáta* (Perfoliate Yellow-wort).—The only British species.—Chalk and limestone pastures; not uncommon. An erect plant, 12—18 inches high, re-



MENYANTHES TRIFOLIATA (*Buck-bean, Marsh Trefoil*).

markable for its glaucous hue, and for its pairs of *leaves*, which are rather distant, being united at the base (connate), with the stem passing through them ; hence its name, *Perfoliate.* The flowers, which are large and handsome, are of a pale yellow, and expand only during sunshine.—Fl. June, September. Annual.

5. MENYANTHES (*Buck-bean*).

1. *M. trifoliata* (Buck-bean, Marsh Trefoil).—The only species ; most common in spongy bogs, or in stagnant water. The only British plant belonging to the Order which has divided leaves. The *stem* scarcely rises above the soil or water in which it grows, but is overtopped by the large ternate (composed of 3 leaflets) *leaves*, which in shape and colour resemble those of the Windsor Bean ; each leaf-stalk has a sheathing base, opposite to one of which rises a compound cluster of exceedingly beautiful flowers, which when in bud are of a bright rose colour, and when fully expanded have the inner surface of the corolla thickly covered with white fringe. The root, which is intensely bitter, is said to be the most valuable of known tonics. Fl. June, July. Perennial.

6. VILLARSIA.

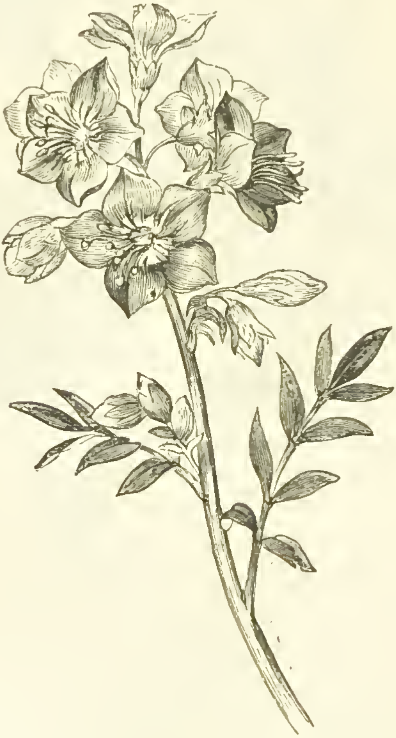
1. *V. nymphæoídes* (Water Villarsia).—The only British species. A rare, floating aquatic, found in some of the still ditches communicating with the Thames, and in a few other places. As its specific name implies, it has the habit of a Water-lily ; the leaves are nearly round ; the flowers large, yellow, and fringed. Fl. July, August. Perennial.

VILLARSIA NYMPHŒOÍDES (*Water Villarsia*).

ORD. LVI.—POLEMONIACEÆ.—JACOB'S LADDER TRIBE.

Calyx deeply 5-cleft, not falling off ; *corolla* regular, 5-lobed ; *stamens* 5, from the middle of the tube of the corolla ; *ovary* 3-celled ; *style* single ; *stigma* 3-cleft ; *capsule* 3-celled, 3-valved. Herbaceous plants, often with showy flowers, which are remarkable for the blue colour of their pollen. They are most common in the temperate parts of America ; but within the tropics are unknown. None of the species possess remarkable properties, but several are favourite garden flowers, as *Phlox*, *Gília*, *Polemónium*, and *Cobœa*. .

1. POLEMÓNIUM (Jacob's Ladder).—*Corolla* wheel-shaped, with erect lobes; *stamens* bearded at the base; *cells* of the capsule many-seeded. (Name, the Greek name of the plant.)



P. CŒRÚLEUM (*Greek Valerian, Blue Jacob's Ladder*)

1. POLEMÓNIUM (*Greek Valerian*).

1. *P. cœrúleum* (Greek Valerian, Blue Jacob's Ladder).—The only British species, occasionally found in woods

in the north, but rare; a common garden flower, not easily rooted out where it has once established itself. A tall, erect plant, 1—2 feet high, with an angular *stem*; pinnate, smooth *leaves;* and numerous terminal, large, blue or white *flowers.*—Fl. June, July. Perennial.

ORD. LVII.—CONVOLVULACEÆ.—THE BINDWEED TRIBE.

Calyx in 5 divisions, imbricated, often very unequal, not falling off; *corolla* of one petal, regular, plaited; *stamens* 5, from the base of the corolla; *ovary* 2—4-celled, few-seeded, surrounded below by a fleshy ring; *style* 1; *stigmas* 2; *capsule* 1—4-celled.—An extensive and highly valuable tribe of plants, most of which are herbaceous climbers, with large and very beautiful flowers. They are most abundant within the tropics, where they are among the most ornamental of climbing plants. As medicines, also, they occupy an important station. The roots of *Convólvulus Scammonia*, a Syrian species, furnishes scammony; jalap is prepared from a resin which abounds in the roots of several kinds of *Exogonium*, a beautiful climber, with long crimson flowers; and *Convólvulus Batátas* is no less valuable in tropical countries, supplying the sweet potato, the roots of which abound in starch and sugar, and are a nourishing food. *Cúscuta* (Dodder) is a parasitic genus, with branched, climbing, cord-like stems, no leaves, and globular heads of small wax-like flowers. The seeds germinate in the ground, and the young plants climb the stems of adjoining plants; and when they have taken root in them, lose their connexion with the ground. One British species is very abundant on the Furze; another on Flax, with the seeds of which it is supposed to be introduced; and a third grows on Thistles and Nettles.

1. Convólvulus (Bindweed).—*Corolla* trumpet-shaped, with 5 plaits and 5 very shallow lobes; *calyx* without bracts; *style* 1; *stigmas* 2; *capsule* 2-celled, 2-valved. (Name, from the Latin *convolvo*, to entwine, from the twisting habit of many species.)

2. Calystégia (Bindweed).—*Corolla* as in Convólvulus; *calyx* enclosed within two bracts; *style* 1; *stigmas* 2; *capsule* 1-celled, 2-valved. (Name in Greek denoting a beautiful covering.)

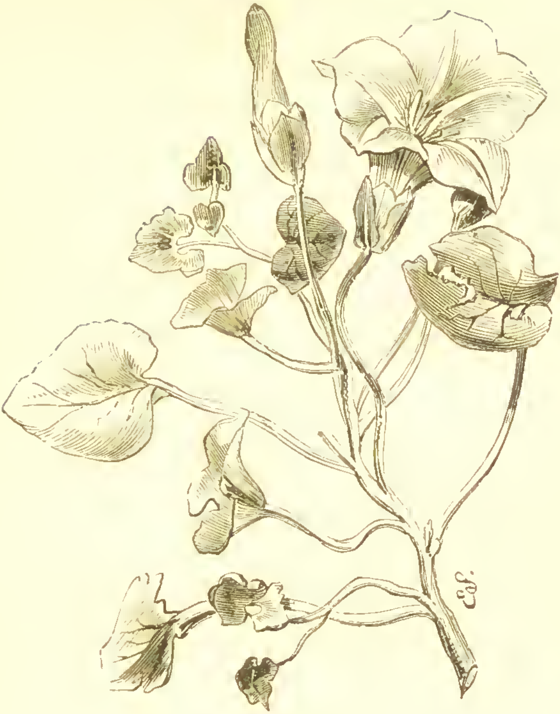
3. Cúscuta (Dodder).—*Calyx* 4—5-cleft; *corolla* bell-shaped, 4—5-cleft, with 4—5 scales at the base within. (Name, said to be derived from the Arabic *Kechout*.)

1. Convólvulus (*Bindweed*).

1. *C. arvensis* (Field Bindweed).—*Stem* climbing; *leaves* arrow-shaped, with acute lobes; *flowers* 1—3 together; *bracts* minute, distant from the flower.—A common weed in light soil, either trailing along the ground among short grass, or climbing wherever it finds a support. The flowers are rose-coloured, with dark plaits, handsome and fragrant, opening only in sunny weather.—Fl. June, July. Perennial.

2. Calystégia (*Bindweed*).

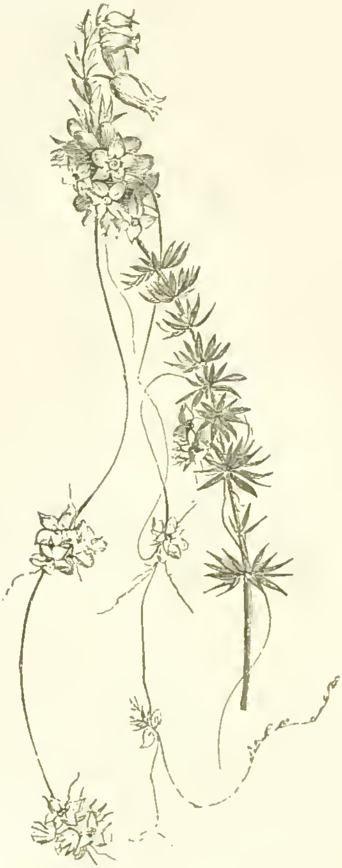
1. *C. sépium* (Great Bindweed).—*Stem* climbing; *leaves* arrow-shaped, with abrupt lobes; *flowers* solitary on square stalks; *bracts* large, heart-shaped, close to the flower.—In bushy places, common, and a most mischievous weed in gardens, not only exhausting the soil with its roots, but strangling with its twining stems the plants which grow near. The flowers are among the largest which this country produces; while in bud they are entirely enclosed in the large bracts, and when expanded are pure white and very handsome. The fruit is not often perfected.—Fl. July—September. Perennial.



CALYSTÉGIA SOLDANELLA (*Sea Bindweed*).

2. *C. Soldanella* (Sea Bindweed).—*Stem* not climbing; *leaves* fleshy, roundish, or kidney-shaped ; *flowers* solitary, on 4-sided, winged stalks ; *bracts* large, egg-shaped, close to the flower.—A very beautiful species, growing only on the sandy sea-coast, and decorating the sloping sides of sand-hills with its large, pale rose-coloured flowers striped with red. The stems are usually almost entirely buried beneath the sand, and the flowers and leaves merely rise above the surface. The flowers, which are nearly as large as those of the preceding species, expand in the morning, and in bright weather

close before night. By some botanists these two plants are placed in the genus *Convólvulus.*—Fl. June—August. Perennial.



CÚSCUTA EPÍTHYMUM (*Lesser Dodder*).

3. Cúscuta (*Dodder*).

1. *C. Epíthymum* (Lesser Dodder).—*Stems* parasitical, thread-like, branched; *flowers* in dense, sessile heads;

tube of the *corolla* longer than the calyx ; *style* longer than the corolla.—Parasitic on Heath, Thyme, Milk Vetch, Potentilla, and other small plants, but most abundant on Furze, which it often entirely conceals with tangled masses of red thread-like stems. The flowers are small, light flesh-coloured, and wax-like. Soon after flowering the stems turn dark-brown, and in winter disappear.—Fl. August, September. Annual.

* Other species of Dodder, which more or less resemble the preceding species, are *C. Europæa* (Greater Dodder), which is parasitical on Thistles and Nettles ; *C. Epilínum* (Flax Dodder), parasitical on Flax, to crops of which it is sometimes very destructive ; *C. Hassíaca*, parasitical on Lucerne ; and *C. Trifolii* (Clover Dodder), parasitical on Clover, with the seeds of which it is supposed to have been introduced.

ORD. LVIII.—BORAGINACEÆ.—THE BORAGE TRIBE.

Calyx in 5, rarely 4, deep divisions, not falling off ; *corolla* of one petal, 5- or rarely 4-cleft, frequently having valves or teeth at the mouth of the tube ; *stamens* 5, inserted into the corolla and alternate with its lobes ; *ovary* 4-parted, 4-seeded ; *style* 1, rising from the base of the divided ovary ; *fruit* consisting of 4, rarely 2, nut-like, distinct seeds, each enclosed in a pericarp.—Herbs or shrubs with alternate leaves, which are usually covered with hairs or bristles rising from a swollen base. This character was considered by Linnæus sufficiently constant to give to the natural order the name of ASPERIFOLIÆ, or Rough-leaved plants, but the present name of the order is now preferred as being more comprehensive, a few plants in it having perfectly smooth leaves. The Borage Tribe are natives principally of the temperate regions of the northern hemisphere, especially of the warmer parts, and are more numerous in the Old than the New World. Most of them bear their flowers in spikes or clusters, which are rolled up round the terminal flowers as a centre, and expand a few at a time. The prevailing colour is blue or purple, but many, when first opening, are of a reddish hue, which subsequently deepens, so that it is not unusual to see flowers of different tints in the same spike or cluster. They possess no remarkable properties, but abound in a soft mucilaginous juice, which gives a coolness to beverages in which they are steeped, on which account Borage is a constant ingredient in the drink known as "cool tankard." The roots of Alkanet and some others contain a red substance, which is used as a dye. Comfrey (*Sýmphytum officinálé*) is sometimes grown as an esculent vegetable, but is little valued except as food for horses. The plants of the genus *Myosótis* are popularly known by the name "Forget-me-not;" the true Forget-me-not is *M. Palustris.*

1. Échium (Viper's Bugloss).—*Corolla* irregular, with an open mouth; *stamens* unequal in length. (Name from the Greek, *echis*, a viper, against the bite of which it was formerly considered an antidote.)

2. Pulmonaria (Lungwort).—*Calyx* tubular, 5-cleft; *corolla* funnel-shaped, its throat naked; *stamens* enclosed within the corolla. (Name from the Latin, *Pulmo*, the lungs, which the spotted leaves were supposed to resemble.)

3. Lithospermum (Gromwell).—*Calyx* deeply 5-cleft; *corolla* funnel-shaped, its throat naked, or with 5 minute scales; *filaments* short; *seeds* stony. (Name from the Greek, *lithos*, a stone, and *sperma*, seed, from the hardness of the seeds.)

4. Merténsia (Smooth Gromwell).—*Calyx* deeply 5-cleft; *corolla* funnel-shaped; *filaments* long; *seeds* somewhat fleshy. (Name in honour of M. Mertens a German botanist.)

5. Sýmphytum (Comfrey).—*Calyx* deeply 5-cleft; *corolla* bell-shaped, closed with 5 awl-shaped scales. (Name from the Greek *symphyo*, to unite, from its imagined healing qualities.)

6. Borágo (Borage).—*Calyx* deeply 5-cleft ; *corolla* wheel-shaped, its throat closed with 5 short, erect, notched scales ; *stamens* forked. (Name, a corruption of *corago*, from *cor*, the heart, and *ago*, to bring, from its use in stimulating drinks.)

7. Lycopsis (Bugloss).—*Calyx* deeply 5-cleft ; *corolla* funnel-shaped, with a bent tube, its throat closed by prominent blunt scales. (Name in Greek signifying "a wolf's face," from some fancied resemblance between the flower and a wolf's head.)

8. Anchúsa (Alkanet).—*Calyx* deeply 5-cleft ; *corolla* funnel or salver-shaped, with a straight tube, its throat closed by prominent blunt scales. (Name from the Greek, *anchousa*, paint, from the use of its roots as a dye.)

9. Myosótis (Scorpion Grass, Forget-me-not).—*Calyx* 5-cleft ; *corolla* salver-shaped, its lobes blunt, twisted when in bud, and its throat nearly closed by blunt scales. (Name in Greek signifying a *mouse's ear*, from the shape of the leaves.)

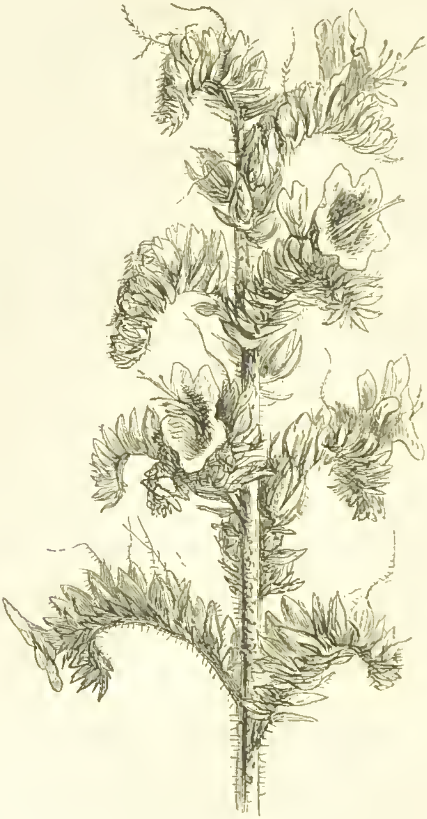
10. Asperúgo (Madwort).—*Calyx* 5-cleft, with alternate smaller teeth ; *corolla* funnel-shaped, with rounded scales in the throat. (Name from the Latin *asper*, rough, from the excessive roughness of the leaves.)

11. Cynoglossum (Hound's-tongue).—*Calyx* 5-cleft ; *corolla* funnel-shaped, with a short tube, its mouth closed by prominent blunt scales ; *nuts* flattened, prickly. (Name in Greek, signifying a *dog's tongue*, from the shape and size of the leaves.)

1. Échium (*Viper's Bugloss*).

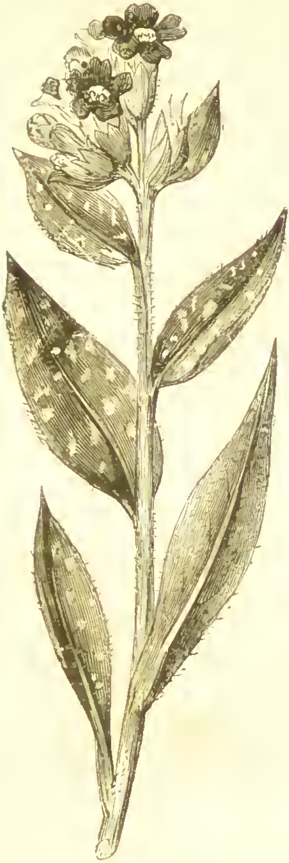
1. *E. vulgáre* (Common Viper's Bugloss).—Rough with prickly bristles ; *leaves* narrow, tapering ; *flowers* in short lateral spikes ; *stamens* longer than the corolla. —Walls, old quarries and gravel-pits. A handsome plant, 2—3 feet high, remarkable for its bristly or almost prickly stems and leaves, and numerous curved spikes of flowers, which on their first opening are bright

rose-coloured and finally of a brilliant blue. The roots are very long, and descend perpendicularly into the loose soil in which the plant usually grows. A variety is occasionally found, with white flowers. The name



ÉCHIUM VULGÁRÉ (*Common Viper's Bugloss*).

Bugloss, which is of Greek origin, signifies an *ox's tongue*, from the roughness and shape of the leaves.—Fl. June, July. Biennial.



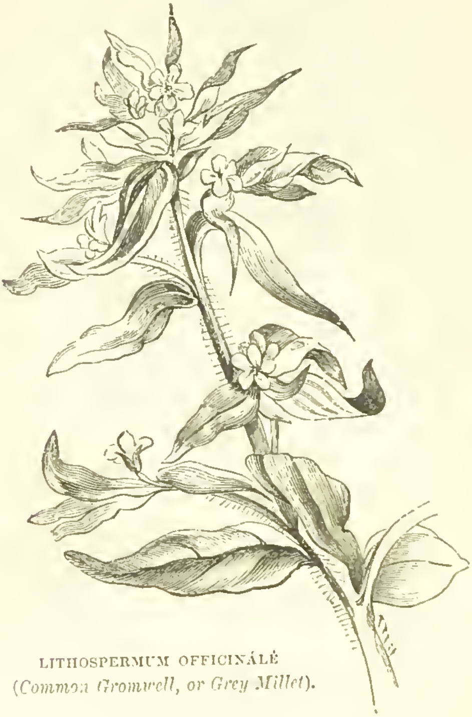
PULMONARIA OFFICINÁLIS (*Common Lungwort*).

2. PULMONARIA (*Lungwort*).

1. *P. officinális* (Common Lungwort).—*Leaves* rough, lower ones stalked, egg-shaped or heart-shaped at the base, upper, egg-shaped, sessile.—Woods and thickets, rare; often an outcast from gardens, where it is culti-

vated for the sake of its ornamental leaves, which are curiously spotted with white, and for its purple flowers. Fl. May. Perennial.

* *P. angustifolia* has narrower leaves than the last, and is a taller plant; it occurs in Hampshire and the Isle of Wight, but is far from common.



LITHOSPERMUM OFFICINÁLÈ
(*Common Gromwell, or Grey Millet*).

3. Lithospermum (*Gromwell*).

1. *L. officinálé* (Common Gromwell, or Grey Millet).—*Stem* erect, much branched towards the summit; *leaves* oblong, tapering to a point, bristly above, hairy beneath: *nuts* polished.—Dry, bushy, and stony places; not

unfrequent. Distinguished by its erect stems, 2 feet high, which generally grow 5 or 6 from the same root, by its small yellowish white flowers, and above all, by its highly polished seeds, which resemble small sea-shells, and contain a considerable quantity of pure silica or flint.—Fl. June, July. Perennial.

2. *L. arvénsé* (Corn Gromwell).—*Stem* branched; *leaves* narrow, tapering, hairy; *nuts* wrinkled.—Corn-fields; less common than the preceding, but not rare. Stem about a foot high, branched from the lower part, and having rather small white flowers, the calyx of which lengthens when in fruit, and contains 3 or 4 brown, wrinkled seeds.—Fl. May—July. Annual.

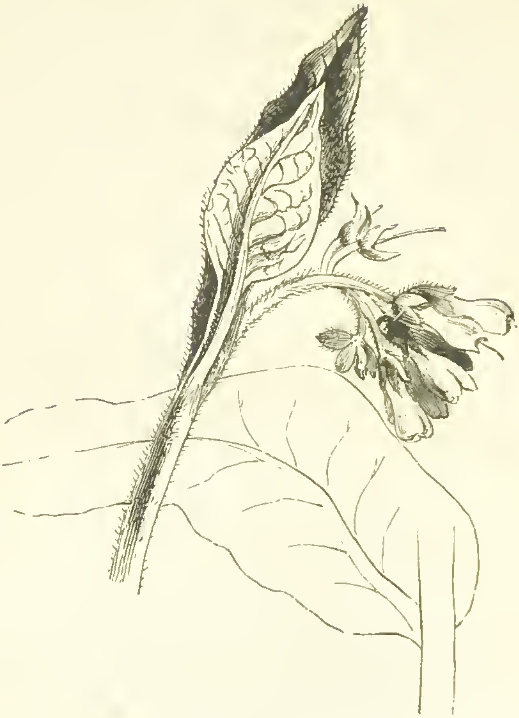
* *L. púrpuro-cærúleum* (Purple Gromwell) is a rare species growing in chalky or limestone soil, and is distinguished by its prostrate barren *stems*, and large bright blue *flowers*.

4. MERTÉNSIA (*Smooth Gromwell*).

1. *M. marítima* (Sea-side Smooth Gromwell).—The only species. A singular plant inhabiting the sea-coast of North Wales, Scotland and Ireland; the *leaves* are fleshy, and covered with a glaucous bloom; they are destitute of bristles, but are sprinkled with hard dots, which are very evident in dried specimens; the plant when fresh is said to have the flavour of oysters; the *flowers* are purplish blue.—Fl. May—June. Perennial.

5. SÝMPHYTUM (*Comfrey*).

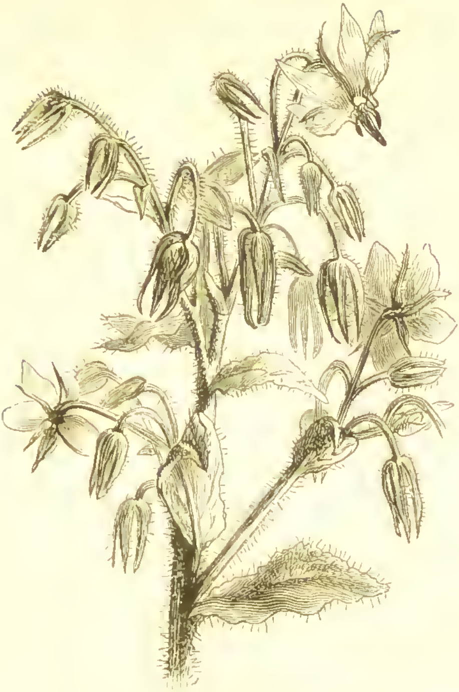
1. *S. officinálé* (Common Comfrey).—*Stem* winged in the upper part; *leaves* elliptical, pointed, tapering towards the base and running down the stem; *flowers* drooping, in 2-forked clusters.—Watery places and banks of rivers, common. A large and handsome plant 2—3 feet high, with branched leafy stems, and several clusters



SÝMPHYTUM OFFICINÀLÈ (*Common Comfrey*).

of white, pink, or purple drooping flowers. Often introduced into gardens, from which it is very difficult to eradicate it when it has once established itself, owing to the brittleness of its fleshy roots, the least bit of which will grow.—Fl. May—August. Perennial.

* *S. tuberósum* (Tuberous Comfrey) is a more slender plant than the preceding, and is very rare, except in Scotland; the stem is scarcely branched, and but slightly winged.

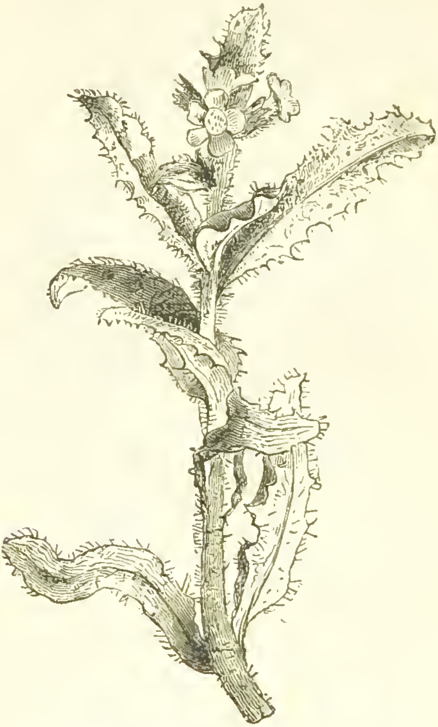


BORÁGO OFFICINALIS (*Common Borage*).

6. Borágo (*Borage*).

1. *B. officinális* (Common Borage).—The only British species, not unfrequent in waste ground, especially near buildings. The stems are about 2 feet high, and, as well as the leaves, are thickly covered with stiff whitish bristles; the flowers, which are large, deep blue, and very handsome, grow in terminal drooping clusters, and may readily be distinguished from any other plant in the order by their prominent black anthers. The juice has the smell and flavour of cucumber, and is an ingredient in the beverage called "cool tankard." A variety some-

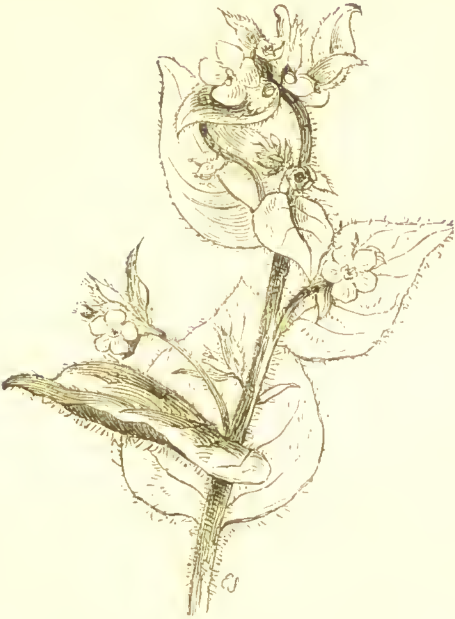
times occurs with white flowers.—Fl. June—September. Biennial.



LYCOPSIS ARVÉNSIS (*Small Bugloss*).

7. LYCOPSIS (*Bugloss*).

1. *L. arvensis* (Small Bugloss).—The only British species, common in waste ground, and on the sea-coast. A branched prickly plant, 6—18 inches high, with oblong wavy *leaves*, and forked, curved clusters of minute blue *flowers*, the tube of which is bent; in which respect it is unlike any other British plant of the order.—Fl. June, August. Annual.



ANCHÚSA SEMPERVÍRENS (*Evergreen Alkanet*).

8. ANCHÚSA (*Alkanet*).

1. *A. sempervírens* (Evergreen Alkanet).—A stout bristly plant, with deep green, egg-shaped *leaves*, and short spikes of rather large, salver-shaped *flowers*, which are of an intense azure blue. It is not generally considered to be a native, but in Devonshire it is not an uncommon hedge-plant.—Fl. June—August. Perennial.

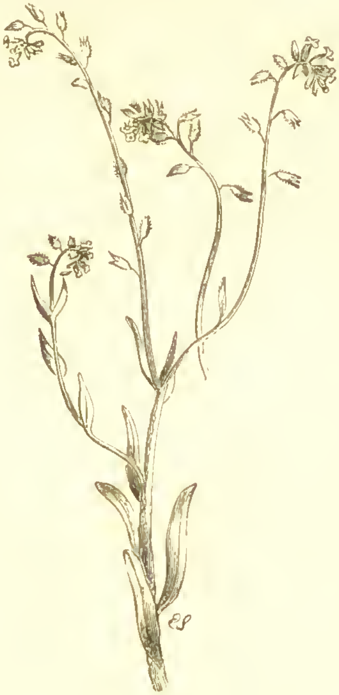
* *A. officinális* (Common Alkanet) has purple, funnel-shaped *flowers*, which grow in 1-sided spikes, the segments of the *calyx* being longer than the *corolla*. It is frequent in gardens, from which it is supposed to have escaped; but it is not common in a wild state.

9. Myosótis (*Mouse-ear, Scorpion-grass, Forget-me-not*).

1. *M. palustris* (Forget-me-not).—*Calyx* covered with straight, closely-pressed bristles, open when in fruit; *root* creeping.—Watery places, common. Few flowers have been more written about than the Forget-me-not, yet there is great disagreement among writers as to the plant to which the name properly belongs. Some appear to have had the *Alkanet* in view; others, the *Speedwell;* and others, again, some of the smaller species of *Myosótis*, which last, though very like the true Forget-me-not, are inferior in size and brilliancy of colour. The real Forget-me-not is an aquatic plant, with a long rooting stem, bright-green, roughish leaves, and terminal, leafless, 1-sided clusters of bright blue flowers, with a yellow eye, and a small white ray at the base of each lobe of the corolla. The species which is most like it is *M. repens* (Creeping Water Scorpion-grass), which, as its name implies, has also a creeping root; the hairs of the calyx are closely pressed, as in *M. palustris*, but the calyx is closed when in fruit, and the clusters of flowers usually have a few leaves on the stalk. *M. cæspitósa* (Tufted Water Scorpion-grass) resembles the above, but has a fibrous root, and the flowers of both the last are smaller than those of *M. palustris*. All three grow in watery places; *M. palustris* being most common, and flowering from June to October, *M. repens* least so, and, as well as *M. cæspitósa*, not flowering so late in the year. Three other and yet smaller species are common, but these do not grow in watery places, and are of a different habit.

2. *M. arvensis* (Field Scorpion-grass).—*Calyx* covered with spreading, hooked bristles, closed when in fruit; *stalks* of the fruit spreading.—In cultivated ground, hedges, and groves, abundant. Whole plant roughish with spreading bristles; the stems are from 6—18 inches high, or more; the flowers blue, small, but very beau-

tiful. This is the commonest species of all.—Fl. June—August. Annual.



MYOSÓTIS VERSÍCOLOR (*Party-coloured Scorpion-grass*).

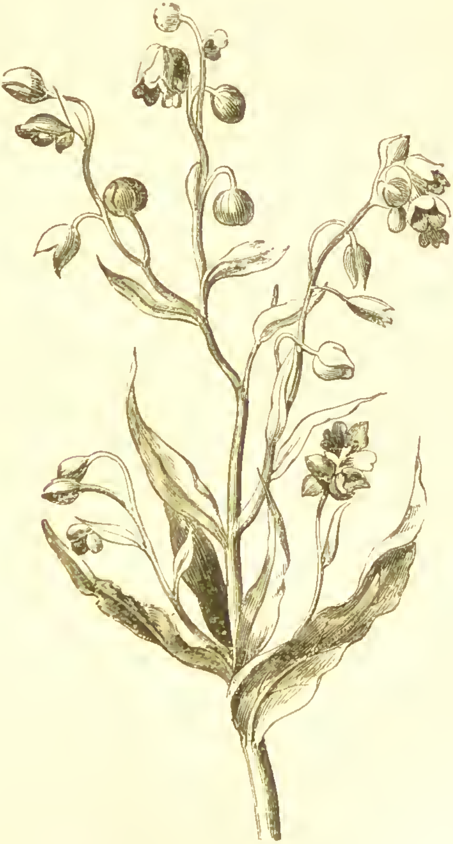
3. *M. collína* (Early Field Scorpion-grass).—*Calyx* covered with spreading hooked bristles, open when in fruit; *cluster* with a solitary flower in the axil of the uppermost leaf.—Dry banks, not uncommon, but frequently overlooked in consequence of its minute size. The whole plant rarely exceeds 3 inches in length; the stems usually spread near the ground, and terminate in clusters of very minute bright blue flowers (never pink or yellow). On its first appearance, in April, the flowers are

buried among the leaves, but the stems finally lengthen into clusters, and as the season advances the whole plant dries up, and disappears.—Fl. April, May. Annual.

4. *M. versícolor* (Party-coloured Scorpion-grass).—*Calyx* covered with spreading, hooked bristles, closed when in fruit; *cluster* on a long leafless stalk; *stalk* of the fruit erect.—Fields and banks, common. A very distinct species, 3—6 inches high; the stem is leafy below, naked above, and ends in a cluster of flowers which are singularly coiled up when in bud, and when they expand are either blue or yellow on the same plant. —Fl. April—June. Annual.

MYOSÓTIS ALPESTRIS (*Mountain Forget-me-not*).

* There are two other British species of *Myosótis,* which approach the Forget-me-not in the size and beauty of their flowers—*M. alpestris,* which grows on the Scottish mountains, and *M. sylvática,* which is almost confined to Scotland and the north of England, where it grows in shady places. Both these species have



CYNOGLOSSUM OFFICINÁLÉ *(Common Hound's-Tongue).*

spreading bristles on the calyx. For a description of two foreign species well worthy of being cultivated, see "Gardening for Children."

10. ASPERÚGO (*Madwort*).

1. *A. procumbens* (German Madwort).—The only species occurring, very sparingly, in Scotland and the north of England. The *stems* are prostrate, angular, and thickly set with rigid, curved bristles ; the *flowers* are small, blue, and solitary in the axils of the upper leaves.—Fl. June, July. Annual.

11. CYNOGLOSSUM (*Hound's-tongue*).

1. *C. officinálé* (Common Hound's-tongue).—*Leaves* downy.—Waste ground, especially near the sea. A stout herbaceous plant, 1—2 feet high, with large downy leaves, lurid-purple flowers, and large flattened seeds, which are covered with barbed prickles, and stick to the wool of animals or the clothes of passengers as closely as burs. The whole plant has a strong disagreeable smell, like that of mice.—Fl. June—August. Biennial.

* *C. sylváticum* (Green-leaved Hound's-tongue) is a plant of very local occurrence ; the *leaves* are shining above (not downy), and the *flowers* reddish, changing to blue.

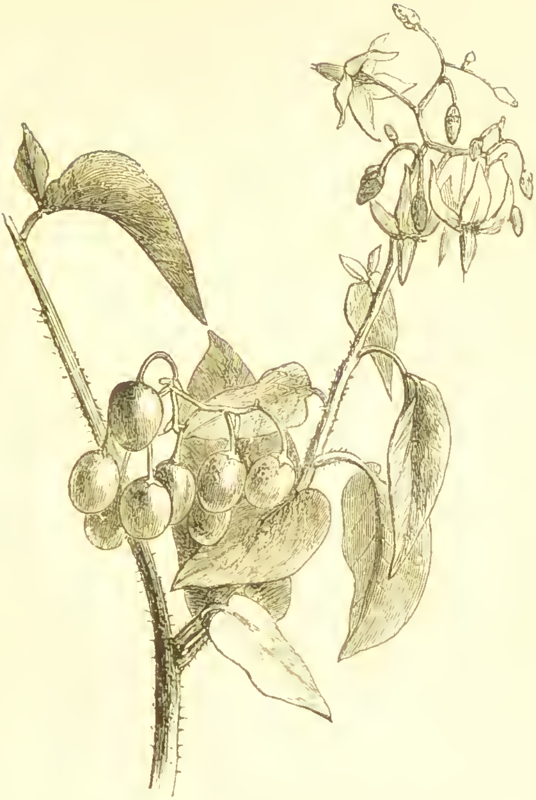
ORD. LIX.—SOLANACEÆ.—NIGHTSHADE TRIBE.

Calyx deeply 5- rarely 4-cleft, inferior ; *corolla* of one *petal*, 5- or rarely 4-cleft, equal or nearly so, plaited when in bud ; *stamens* equalling in number the divisions of the corolla, and alternate with them ; *anthers* bursting lengthwise, or opening by pores ; *ovary* 2-celled ; *style* 1 ; *stigma* simple ; *fruit* a 2- or 4-celled capsule or berry ; *seeds* numerous.—A large and highly important order, containing about 900 species of herbaceous plants or shrubs, which inhabit most parts of the world except the coldest, and are most abundant within the tropics. The prevailing property of plants belonging to the Nightshade Tribe is narcotic, and many are, in consequence, highly poisonous ; in others, certain parts of the plant have poisonous properties, the rest being harmless, and some even contain a large quantity of nutritious matter. The genus *Solánum* is a very extensive one, comprising as many as 600 species. First among these in importance stands the Potato (*S. tuberósum*), a native of Chili, Lima, Quito, and Mexico, which was introduced into Spain in the early part of the 16th century, and into Ireland by the colonists sent out by Sir Walter Raleigh, who brought it from Virginia in 1586. It was first planted on Sir Walter Raleigh's estate at Younghall, near Cork, and was cultivated for food in that country long before its value was known in England. Its leaves and berries are narcotic, but its tubers contain no noxious matter, abounding in an almost tasteless starch ; on which account it is less liable to cloy on the palate than any other vegetable food except bread. *S. Melóngena* (the Egg-plant), a common greenhouse plant, is remarkable for bearing a large berry of the size and colour of a pullet's egg. *S. Dulcamára*, (Nightshade, or Bittersweet,) a common English plant, with purple and yellow flowers, has narcotic leaves and scarlet berries, which possess the same property. *S. nigrum*, a smaller species, a common weed in England and most other countries, except the coldest, has white flowers and black berries. It is narcotic to a dangerous degree. *Átropa Belladonna*, a stout herbaceous plant, with dingy purple bell-shaped flowers, is the Deadly Nightshade, so called from the poisonous nature of every part of the plant, especially the berries, which are large, black and shining, and of a very attractive appearance. Its juice possesses the singular property of dilating the pupil of the eye, on which account it is extensively used by oculists when operations are to be performed. The Mandrake (*Mandrágora officinalis*) was anciently thought to possess miraculous properties. It was said to shriek when taken from the ground, and to cause the instant death of any one who heard its cries. The person who gathered it, therefore, always stopped his ears with cotton, and harnessed a dog to the root, who, in his efforts to escape, uprooted the plant, and instantly fell dead. The forked root was then trimmed so as to resemble the human form, a berry being left to represent the head. The fruit is eatable. Tobacco is the foliage of several species of *Nicotiana*, a violent poison when received into the stomach, though commonly employed in other ways without apparent ill effects. *Hyoscýamus niger*, or Henbane, is a stout herbaceous plant, with sticky, fœtid leaves, and cream-coloured flowers veined with purple ; it is a powerful narcotic, and in skilful hands scarcely less valuable than opium. *Datúra Stramonium* (Thorn-apple) bears large, white, trumpet-shaped flowers, and prickly seed-vessels ; it is also a dangerous poison, though employed with good effect in several nervous and other disorders, especially asthma. *Phýsalis Alkekengi* is the Winter Cherry, remarkable for bearing a crimson berry enclosed in the enlarged calyx, which after exposure to the wet, decays, leaving the berry hanging within a case of network. The genus *Cápsicum* affords Cayenne pepper, which is prepared by grinding the dried seed-vessels with their contents. Finally, *Lycopérsicum* produces Tomatoes or Love Apples, which are much used in making sauce.

1. SOLÁNUM (Nightshade).—*Corolla* wheel-shaped, 5-cleft, the segments spreading or reflexed ; *anthers* opening by 2 pores, at the summit ; *berry* roundish, with 2 or more cells. (Name of doubtful origin.)

2. ÁTROPA (Deadly Nightshade).—*Corolla* bell-shaped, with 5 equal lobes ; *stamens* distant ; *berry* of two cells. (Name from *Átropos*, one of the Fates, who was supposed to cut the thread of human destiny.)

3. HYOSCÝAMUS (Henbane).—*Corolla* funnel-shaped, with 5 unequal lobes ; *capsule* 2-celled, closed by a lid. (Name in Greek signifying *Hog's-bean*.)

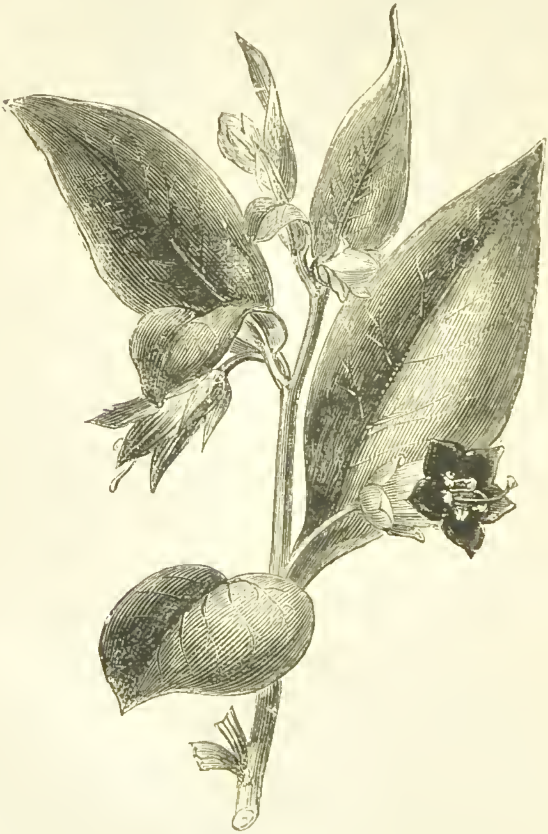


SOLANUM DULCAMÁRA (*Woody Nightshade, Bittersweet*).

1. Solánum (*Nightshade*).

1. *S. Dulcamára* (Woody Nightshade, Bittersweet).—*Stem* shrubby, climbing; *leaves* heart-shaped, the upper ones eared at the base; *flowers* drooping.—Damp hedges and thickets, common. This plant, which is frequently though incorrectly, called *Deadly Nightshade*, is well marked by its straggling, woody stem, which climbs

among bushes to the length of 8 or 10 feet, and by its purple flowers, the yellow anthers of which unite in the form of a cone. At the base of each lobe of the corolla are 2 green spots. The flowers grow in drooping, loose tufts, and are succeeded by scarlet berries, the length of which slightly exceeds the breadth.—Fl. June [illegible]y. Perennial.



ARTOPA BELLADONNA (*Deadly Nightshade, Dwale*)

2. *S. nigrum* (Black Nightshade).—*Stem* herbaceous; *leaves* egg-shaped, wavy at the edge, and bluntly toothed; *flowers* drooping.—Waste ground, common. A branching herb, with drooping umbels of white flowers and black globular berries.—Fl. July—September. Annual.

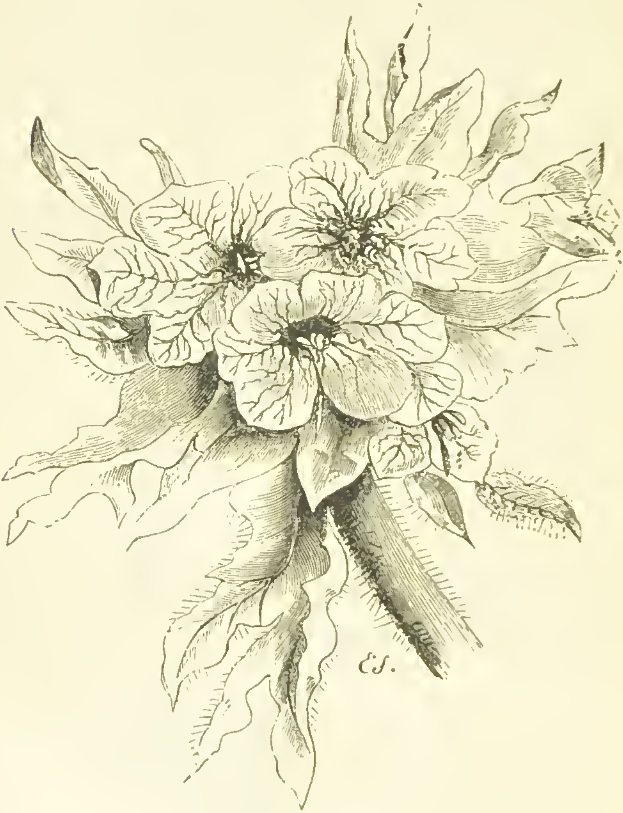
2. ÁTROPA (*Deadly Nightshade*).

1. *A. Belladonna* (Deadly Nightshade, Dwale).—A stout herbaceous plant, 3—4 feet high, with large egg-shaped *leaves*, and solitary, drooping, bell-shaped *flowers*, which grow in the axils of the upper leaves, and are of a lurid purple hue. The berries are black, and as large as cherries, which they somewhat resemble in appearance, but may be readily distinguished by the calyx at the base. This noxious plant, which is the most dangerous growing in Britain, on account of its active poisonous properties and the attractive appearance of its berries, is fortunately of rare occurrence, growing principally in old quarries and among ruins. Buchanan relates that the Scots mixed the juice of Belladonna with the bread and drink, with which by their truce they were to supply the Danes, which so intoxicated them, that the Scots killed the greater part of Sweno's army while asleep. The "insane root that takes the reason prisoner," mentioned by Shakspeare, is also thought to be this. The English name *Dwale* is derived from a French word *deuil*, which signifies "mourning."—Fl. June—August. Perennial.

3. HYOSCÝAMUS (*Henbane*).

1. *H. niger* (Common Henbane).—The only British species, common in waste places, especially on a chalky soil or near the sea. An erect, branched, herbaceous plant, 2—3 feet high, with large, viscid, hairy *leaves*, and numerous funnel-shaped, cream-coloured *flowers* with purple veins and a dark eye. The flowers are arranged in rows along one side of the stem, and are succeeded by 2-celled capsules, which are enclosed by the calyx, and

covered by a lid which falls off when the seeds are ripe. The whole plant has an exceedingly disagreeable smell, and is dangerously narcotic, especially at the time when the seeds are ripening. An extract is used in medicine, and is often of great service, producing the effect of opium without the unpleasant symptoms which frequently follow the administration of that drug. The



HYOSCÝAMUS NIGER (*Common Henbane*)

capsules and seeds of Henbane, smoked like tobacco, are a rustic remedy for the tooth-ache; but convulsions and temporary insanity are said to be sometimes the consequences of their use.—Fl. June, July. Annual or Biennial.

ORD. LX.—OROBANCHACEÆ.—BROOM-RAPE TRIBE.

Calyx variously divided, not falling off; *corolla* irregular, usually 2-lipped, imbricated in the bud; *stamens* 4, 2 long and 2 short; *anthers* often pointed or bearded at the base; *ovary* in a fleshy disk, many-seeded; *style* 1; *stigma* 2-lobed; *capsule* 2-valved; *seeds* small, numerous, attached to the valves of the capsule in 2—4 rows.—A tribe of herbaceous plants, distinguished by a stout succulent stem, which is of a peculiar dingy red hue, bearing no leaves, but more or less clothed with taper-pointed scales, which are most abundant about the swollen base of the stem. The flowers are large for the size of the plant, and in all British species are of nearly the same hue as the stem, and arranged in a spike not unlike a head of asparagus, with one or more scale-like bracts at the base of each flower. All the species are parasitical on the roots of other plants. The seeds, it is said, will lie buried for some years in the ground without vegetating, until they come in contact with the young roots of some plant adapted to their wants, when they immediately sprout, and seize on the points of the roots, which swell, and serve as a base to the parasite. There are but two British genera belonging to this order, *Orobánché* and *Lathræa*, of which some attach themselves to particular species; others infest particular tribes, and others, again, have a wider range of subjects. Several of those belonging to the genus *Orobánché* are very difficult of discrimination; botanists, indeed, are not agreed as to the number of species; some uniting under a common name specimens found growing on various plants; others considering a slight variation in structure, joined to a difference of situation, enough to constitute a specific distinction.

1. OROBÁNCHÉ (Broom-rape).—*Calyx* of two lateral sepals, which are usually 2-cleft, and often combined in front, with 1—3 bracts at the base; *corolla* gaping, 4—5-cleft, not falling off.—(Name from the Greek, *órobos*, a vetch, and *ancho*, to strangle, from the injurious effects produced in the plants to which they attach themselves.)

2. LATHRÆA (Tooth-wort).—*Calyx* bell-shaped, 4-cleft; *corolla* gaping, 2-lipped, the upper lip arched, entire, not falling off.—(Name in Greek signifying *concealed*, from the humble growth of the plants among dead leaves.)

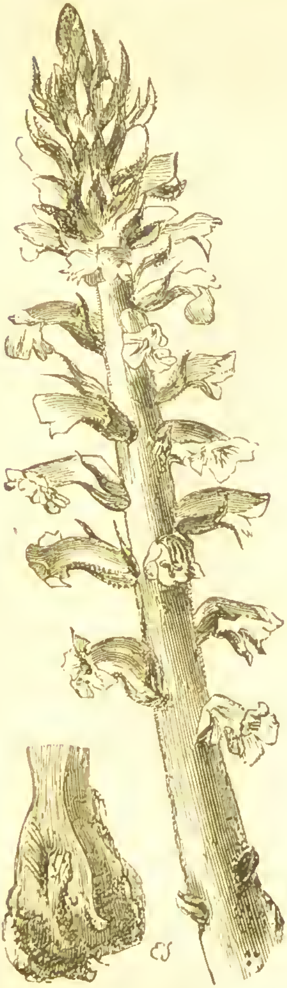
1. OROBÁNCHÉ (*Broom-rape*).

* *Bracts one to each flower.*

1. *O. major* (Greater Broom-rape).—*Corolla* tubular, the lower lip in 3 lobes, of which the middle one is blunt and longer than the others; *stamens* smooth below, downy above; *style* downy.—On the roots of Furze, Broom, and other plants of the order *Leguminosæ*, frequent. A stout, leafless, club-like plant, much swollen at the base, of a reddish-brown hue, viscid and clothed with tapering scales, which pass into bracts as they ascend the stem. The flowers are of a pinkish-brown hue, and are crowded into a dense spike. The juice is bitter and astringent, and has been used medicinally.—Fl. June, July. Perennial.

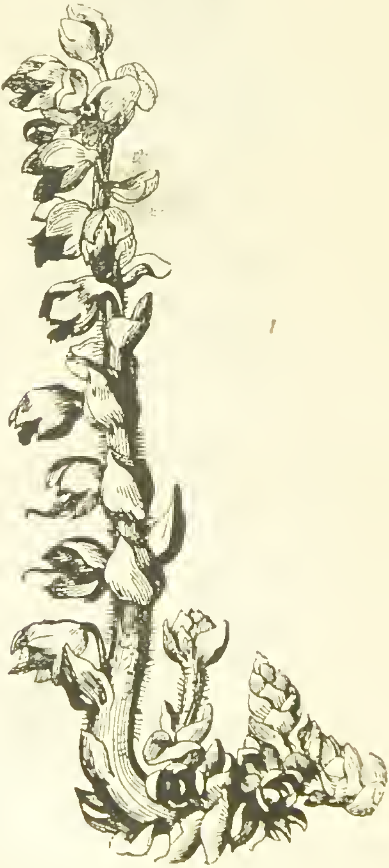
2. *O. minor* (Lesser Broom-rape).—*Stamens* hairy below, smooth above; *style* nearly smooth.—Under this description are included several species, or varieties, which are parasitical severally on Clover, Ivy, and Sea-Carrot. They all resemble the last in habit, but are of smaller size.

* To this group belong *O. caryophyllácea* (Clove-scented Broom-rape), a species with hairy *stamens*, and



OROBÁNCHÉ MAJOR (*Great Broom-rape*).

a dark purple *stigma* ; growing in Kent, on the roots of *Galium Mollúgo* : *O. elatior*, a rare species, parasitical on *Centauréa scabiosa:* and *O. rubra*, abundant on basaltic rock in Scotland and the north of Ireland, and on magnesian rock at the Lizard Point, Cornwall. This species appears to be parasitical on the roots of Wild Thyme.



LATHRÆA SQUAMÁRIA (*Toothwort*)

** *Bracts 3 under each flower.*

3. *O. ramósa* (Branched Broom-rape).—*Stem* branched. —On the roots of Hemp, very rare. Distinguished from the preceding by its lighter colour, and branched stem.—Fl. August, September. Annual.

* *O. cœrulea* is another rare species, found in Norfolk, Hertfordshire, and the Isle of Wight. It may be distinguished by its 3 bracts, and its bluish-purple hue.

2. LATHRÆA (*Tooth-wort*).

1. *L. squamária* (Tooth-wort).—The only British species, growing in woods and thickets, on the roots of the Hazel. The *stem* is branched below the surface of the ground, or withered leaves among which it grows; it is of a lightish hue, and thickly clothed with tooth-like *scales*; each *branch* bears a 1-sided cluster of drooping purplish *flowers*, with rather broad *bracts* at the base of each.—Fl. April, May. Perennial.

ORD. LXI.—SCROPHULARIACEÆ.—FIG-WORT TRIBE.

Calyx 4—5-lobed, not falling off; *corolla* irregular, often 2-lipped; *stamens* usually 4, 2 long and 2 short (didynamous), sometimes 2 or 5; *ovary* 2-celled; *style* 1; *stigma* 2-lobed; *capsule* 2-celled, 2—4-valved, or opening by pores.—A large and important order, containing nearly two thousand species, of which some are shrubs, but the greater number are herbaceous, inhabiting all parts of the world, from the Arctic regions to the tropics. The general character of the species is acrid and bitterish, and some have powerful medicinal properties. The powdered leaves of Foxglove (*Digitális purpúrea*) lower the pulse, and, if taken in large doses, are poisonous. *Euphrásia* (Eye-bright), the "Euphrasy" of Milton, makes a useful eye-water. Among foreign species, *Gratíola* is said to be the active ingredient in the famous gout medicine, "Eau médicinale." Foxglove, Snapdragon, Mullein, and Toad-flax, have showy and ornamental flowers; and several kinds of Speedwell (*Verónica*) are deservedly admired for their small but elegant blue flowers.

* *Stamens* 4, 2 *long and* 2 *short* (*didynamous*).

1. DIGITÁLIS (Foxglove).—*Calyx* in 5 deep, unequal segments; *corolla* irregularly bell-shaped, with 4—5 shallow lobes; *capsule* egg-shaped.—(Name from the Latin *digitálé*, the finger of a glove, which its flowers resemble.)

2. ANTIRRHÍNUM (Snapdragon).—*Calyx* 5-parted; *corolla* personate, swollen at the base (not spurred), its mouth closed by a palate; *capsule* oblique, opening by pores at the top.—(Name in Greek signifying *opposite the nose*, from the mask-like appearance of the flowers.)

3. LINÁRIA (Toad-flax).—Like *Antirrhínum*, except that the *corolla* is spurred at the base.—(Name from *Linum*, Flax, which the leaves of some species resemble.)

4. SCROPHULARIA (Fig-wort).—*Calyx* 5-lobed; *corolla* nearly globose, with two short lips, the upper 2-lobed, with a small scale within, the lower 3-lobed; *capsule* opening with 2 valves, the edges of which are turned in. —(Name from the disease for which the plant was formerly thought a specific.)

5. LIMOSELLA (Mudwort).—*Calyx* 5-cleft; *corolla* bell-shaped, 5-cleft, equal; *capsule* globose, 2-valved.—(Name from the Latin *limus*, mud, from the character of the places in which the plant grows.)

6. MELAMPÝRUM (Cow-wheat).—*Calyx* tubular, with 4 narrow teeth; *corolla* gaping, *upper lip* flattened vertically, turned back at the margin, *lower lip* 3-cleft; *capsule* oblong, obliquely pointed, flattened; *seeds* 1 or 2 in each cell.—(Name in Greek signifying *black wheat*, the seeds, when ground and mixed with flour, being said to make it black.)

7. PEDICULÁRIS (Red-rattle).—*Calyx* inflated, its segments somewhat leafy; *corolla* gaping, *upper lip* arched, flattened vertically, *lower lip* plane, 3-lobed; *capsule* flattened, oblique; *seeds* angular.—(Name in allusion to the disease produced in sheep which feed in places where it grows.)

8. RHINANTHUS (Yellow-rattle).—*Calyx* inflated, 4-toothed; *corolla* gaping, *upper lip* flattened vertically, *lower lip* plane, 3-lobed; *capsule* flattened, blunt; *seeds* numerous, flat and bordered.—(Name in Greek signifying *nose-flower*, from its peculiar shape.)

9. BARTSIA.—*Calyx* tubular, 4-cleft; *corolla* gaping, with a contracted throat, *upper lip* arched, entire, *lower lip* 3-lobed, lobes bent back; *capsule* flattened, pointed; *seeds* numerous, angular.—(Name in honour of John Bartsch, a Prussian botanist.)

10. EUPHRASIA (Eye-bright).—*Calyx* tubular, 4-cleft; *corolla* gaping, *upper lip* divided, *lower lip* in 3 nearly equal lobes; *anthers* spurred at the base; *capsule* flattened, blunt or notched; *seeds* numerous, ribbed.—(Name from the Greek, *Euphrósyne*, gladness, from the valuable properties attributed to it.)

11. SIBTHORPIA (Cornish Money-wort).—*Calyx* in 5 deep spreading segments; *corolla* wheel-shaped, 5-cleft, nearly regular; *capsule* nearly round, flattened at the top.—(Name in honour of Dr. Sibthorp, formerly professor of botany at Oxford.)

* * *Stamens* 2.

12. VERÓNICA (Speedwell).—*Corolla* wheel-shaped, unequally 4-cleft, lower segment the narrowest.—(*Veronica* is the name of a saint in the Romish Church, but why given to this plant is unknown.)

* * * *Stamens* 5.

13. VERBASCUM (Mullein).—*Calyx* 5-parted; *corolla* wheel-shaped, 5-cleft, irregular; *stamens* hairy.—(Name

from the Latin *barba,* a beard, from the shaggy leaves of some species.)

DIGITÁLIS PURPÚREA (*Purple Foxglove*).

1. DIGITÁLIS (*Foxglove*).

1. *D. purpúrea* (Purple Foxglove).—The only British species, common in many of the hilly districts of Great

Britain, but almost unknown in the plains. A stately plant, 2—6 feet high, with large wrinkled *leaves*, and a tall *stem*, bearing numerous handsome, purple, bell-shaped *flowers*, which are arranged in the form of a tapering *spike*, and droop after expansion. On the inside the flowers are beautifully spotted; occasionally they are found of a pure white; but though this variety is elegant, it is by no means so striking a plant as the other. The name *Foxglove* is by some supposed to be a corruption of *folk's glove*; that is, *Fairies' gloves*. The powdered leaf is a valuable medicine in cases where it is desired to lower the pulse.—Fl. June, July. Biennial.

2. ANTIRRHÍNUM (*Snapdragon*).

1. *A. majus* (Great Snapdragon).—*Leaves* narrow, tapering; *spikes* many-flowered; *sepals* egg-shaped, blunt, much shorter than the corolla.—In limestone quarries, chalk-pits, and on old walls, common. A handsome plant, with numerous leafy stems, each of which bears a spike of large, erect, personate flowers of a purple hue sporting to rose-colour or white. Specimens are common in gardens, the tints of which vary considerably; the most beautiful is of a rich crimson; one of a delicate lemon-colour is also frequent. Children derive much amusement from pinching the flowers between the finger and thumb, when the palate opens, as if in imitation of the fabulous monster from which it derives its name.—Fl. June—August. Perennial.

2. *A. Oróntium* (Lesser Snapdragon).—*Leaves* very narrow, tapering; *spikes* few-flowered; *sepals* much longer than the corolla.—Corn-fields, not uncommon. Smaller than the last, and at once distinguished by its leafy sepals, which are much longer than the small purple flowers.—Fl. July—September. Annual.

3. LINARIA (*Toad-flax*).

1. *L. vulgáris* (Yellow Toad-flax).—*Leaves* linear, tapering to a point, crowded; *flowers* in dense spikes;

ANTIRRHÍNUM ORÓNTIUM (*Lesser Snapdragon*).

sepals smooth, shorter than the spur or capsule.—Hedges, very common. An erect herbaceous plant, 1—2 feet high, with numerous grass-like leaves of a glaucous hue, and dense spikes or clusters of yellow flowers, which are shaped like those of the *Snapdragon*, but spurred at the base. A variety is sometimes found with a regular corolla and five spurs.—Fl. August, September. Perennial.

2. *L. Elatíné* (Sharp-pointed Fluellen, or Toad-flax). —*Leaves* halbert-shaped ; *stem* trailing.—Corn-fields,

frequent. A small prostrate plant, with downy stem and leaves; solitary, axillary flowers, of which the upper lip is deep purple, the lower, yellow.—Fl. July—September. Annual.

LINÁRIA VULGÁRIS (*Yellow Toad-flax*), *and* LINÁRIA ELÁTÍNÉ (*Sharp pointed Fluellen, or Toad-flax*).

3. *L. spuria* (Round-leaved Toad-flax).—*Leaves* egg-shaped; *stem* trailing.—Corn-fields, not general. Resembling the last so closely, that it might be mistaken for a luxuriant specimen. The flowers are of the same colour, but larger; the leaves, however, are always rounded at the base, not halbert-shaped.—Fl. July—September. Annual.

4. *L. Cymbalária* (Ivy-leaved Toad-flax).—*Leaves* heart-shaped, 5-lobed, smooth; *stem* creeping.—On old garden walls, common. Not a native species, but quite

naturalized; growing freely from seed, and extending widely, by help of its long, rooting stems. The flowers are small, solitary, and light purple; the leaves somewhat fleshy, and of a purple hue beneath. In the west of England it is commonly known by the name of *Mother-of-thousands.*—Fl. nearly all the year round. Perennial.

* Less common species of *Linaria* are *L. minor* (Least Toad-flax), a small, erect, much-branched plant, with very narrow downy *leaves*, and solitary purplish-yellow *flowers:* and *L. repens* (Pale-blue Toad-flax), a slender, erect plant, 1—2 feet high, with glaucous, very narrow *leaves*, and veined, purplish-blue *flowers* growing in spiked clusters. Several other species sometimes occur as weeds in gardens, and growing on ballast near the sea, but they have no claim to be considered natives.

4. SCROPHULÁRIA (*Fig-wort*).

1. *S. nodósa* (Knotted Fig-wort).—*Stem* square, with the angles blunt; *leaves* smooth, heart-shaped, tapering to a point; *flowers* in loose panicles.—Moist bushy places, common. A tall herbaceous plant, 3—4 feet high, with repeatedly-forked panicles of almost globular, dingy purple flowers, but attractive neither in form nor colour.—Fl. June, July. Perennial.

2. *S. aquática* (Water Fig-wort).—*Stem* square, with the angles winged; *leaves* smooth, heart-shaped, oblong, blunt; *flowers* in close panicles.—Sides of streams and ditches, common. Resembling the last, but at once distinguished by the winged angles of its stems, which, though hollow and succulent, are rigid when dead, and prove very troublesome to anglers, owing to their lines becoming entangled in the withered capsules.—Fl. July, August. Perennial.

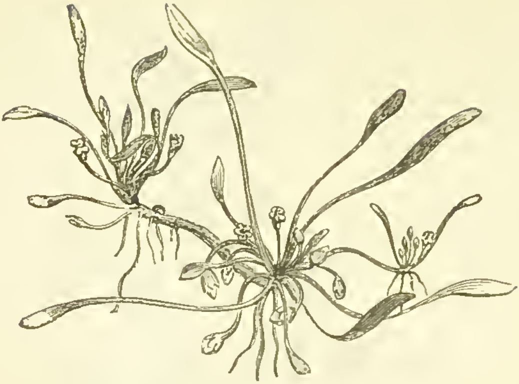
* *S. Scorodónia* (Balm-leaved Fig-wort) is found only in Cornwall, and at Tralee, in Ireland; it is distinguished by its downy, wrinkled leaves: *S. vernális*

SCROPHULARIA AQUÁTICA (*Water Fig-wort*).

(Yellow Fig-wort) is a plant of local occurrence, and is well distinguished by its remarkably bright-green foliag and yellow flowers. It appears early in spring, and is the only British species which can be called ornamental.

5. Limosella (*Mud-wort*).

1. *L. aquática* (Common Mud-wort).—The only British species; growing in watery places, but not general.—A small plant, throwing up from the roots a number of smooth *leaves* on long stalks, and several



LIMOSELLA AQUÁTICA (*Common Mud-wort*).

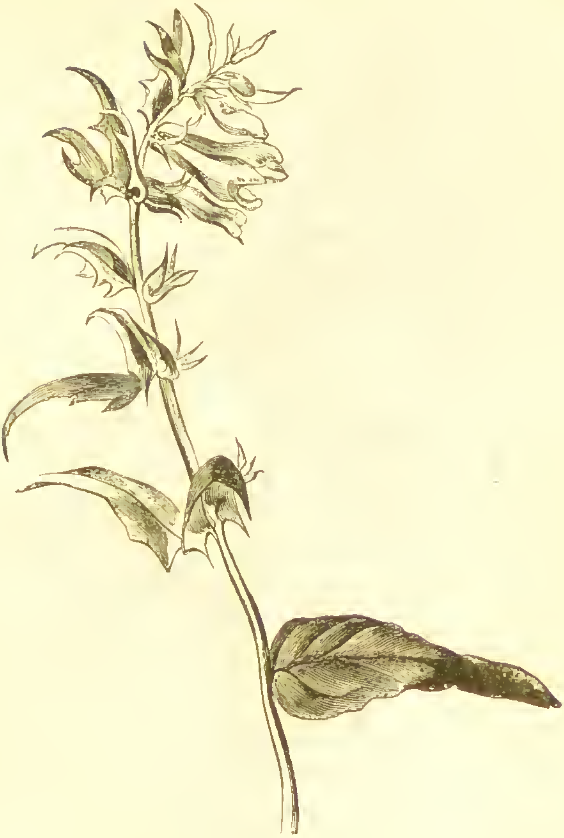
minute, pale rose-coloured or white *flowers*, which are overtopped by the leaves.—Fl. July, August. Annual.

6. Melampýrum (*Cow-wheat*).

1. *M. pratensé* (Common Yellow Cow-wheat).—*Leaves*, in distant pairs, narrow, tapering, smooth; *flowers* axillary, in pairs, all turning one way; *corolla* four times as long as the calyx, *lower lip* longer than the *upper*.—Woods, common. A slender plant, about a foot high, with opposite pairs of straggling branches below, very narrow leaves, and long-tubed, yellow flowers. Cows are said to be fond of it, and, according to Linnæus, the best and yellowest butter is made where it abounds. The name *pratensé* (growing in meadows) was given to it erroneously, as it is never found in such situations.—Fl. June—August. Annual.

* *M. sylváticum* is a smaller species, occurring in mountainous woods, but not common. The *corolla* is only twice as long as the calyx, and the *lips* are equal.

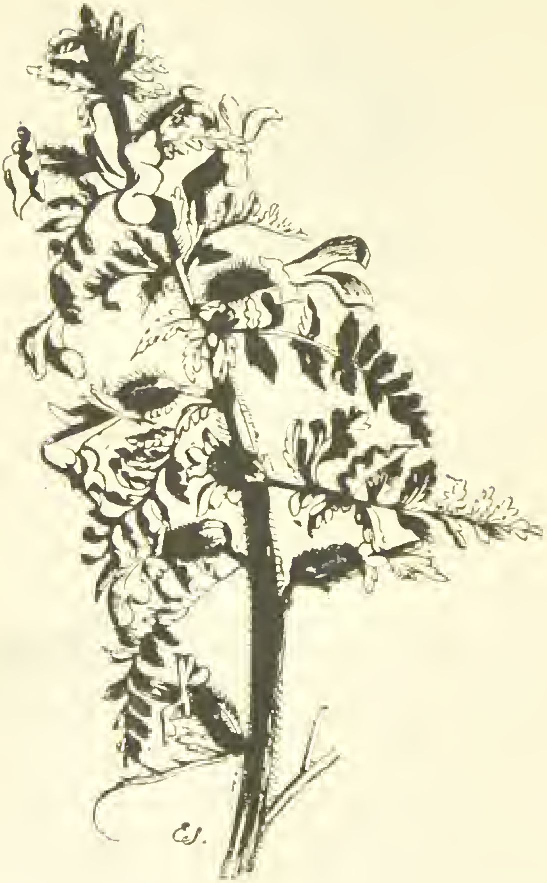
2. *M. arvensé* (Purple Cow-wheat).—*Flowers* in oblong spikes; *bracts* leaf-like, very much cut and toothed,



MELAMPŸRUM PRATENSÉ (*Cómmon Yellow Cow-wheat*).

—Corn-fields in Norfolk and the Isle of Wight. Very distinct from the preceding, and well-marked by its terminal spikes of yellow and purple flowers, which are almost buried among numerous bright rose-coloured bracts.—Fl. June, July. Annual.

* *M. cristátum* (Crested Cow-wheat) is distinguished from the preceding by bearing its flowers in 4-sided spikes. Both are beautiful plants.



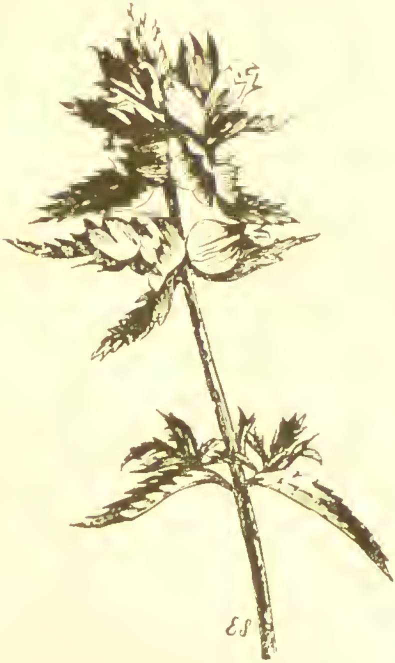
PEDICULÁRIS PALUSTRIS (*Marsh Red-rattle*).

7. Pediculáris (*Red-rattle*).

1. *P. palustris* (Marsh Red-rattle).—*Stem* solitary, erect, branched throughout; *calyx* downy, with 2 deeply-cut lobes.—Marshes and bogs, common. An herbaceous plant, well distinguished by the purple tinge

of its branches, which are arranged in a pyramidal manner, by its deeply-cut leaves, and large, crimson flowers. It is often a conspicuous plant in boggy ground, growing 12—18 inches high, and overtopping most of the surrounding herbage.—Fl. June—September. Perennial.

2. *P. sylvática* (Dwarf Red-Rattle).—*Stems*, several from the same root, prostrate, unbranched; *calyx* smooth, with 5 unequal, leaf-like lobes.—Heathy places, common. Distinguished from the last by its humbler growth and rose-coloured flowers, as well as by the above characters.—Fl. June—August. Perennial.



RHINANTHUS CRISTA-GALLI (*Cock's-comb. Yellow rattle*)

8. RHINANTHUS (*Yellow-rattle*).

1. *R. Crista-galli* (Cock's-comb, Yellow-rattle).—*Leaves* narrow-oblong, tapering to a point, serrated; *flowers* in loose spikes; *bracts* egg-shaped, deeply serrated.—In cultivated land, common. An erect, somewhat rigid plant, 12—18 inches high, composed of a single stem, and terminating in a loose spike of yellow flowers, which are rendered conspicuous by their inflated calyces. "When the fruit is ripe, the *seeds* rattle in the husky capsule, and indicate to the Swedish peasantry the season for gathering in their hay. In England, Mr. Curtis well observes, hay-making begins when the plant is in full *flower*." (Sir W. J. Hooker.)—Fl. June. Annual.

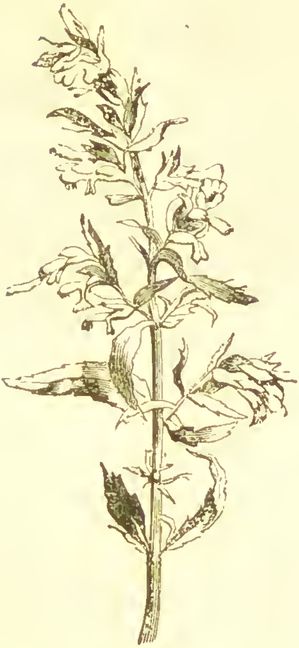
* Another species or variety, *R. major* (Large bushy Yellow-rattle), occurring in the north of England, bears the *flowers* in crowded *spikes*, and at the base of each is a yellowish bract ending in a fine point.

9. BÁRTSIA.

1. *B. viscósa* (Yellow viscid Bartsia).—*Leaves* narrow, tapering, deeply serrated, *lower* opposite, *upper* alternate; *flowers* axillary.—Marshes and wet pastures, not common. Somewhat resembling *Rhinanthus Crista-galli* (Yellow-rattle), but at once distinguished by its solitary, not spiked, yellow flowers, and by being covered with clammy down.—Fl. August, September. Annual.

2. *B. Odontítes* (Red Bartsia).—*Leaves* narrow, tapering, serrated; *flowers* in one-sided, spike-like clusters.—Corn-fields, abundant. A much-branched herbaceous plant, 6—12 inches high, with narrow, dingy, purplish-green leaves, and numerous one-sided spikes of small pink flowers. While flowering, the spikes usually droop towards the ends.—Fl. July—September. Annual.

* *B. alpína* (Alpine Bartsia) is a rare species, found in Scotland and the north of England, and approaching

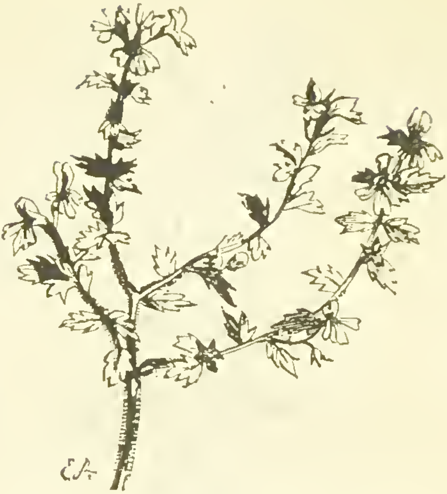


BÁRTSIA ODONTÍTES (*Red Bartsia*).

B. viscósa in habit. In this species the *leaves* are all opposite, and the *flowers* grow in a short, leafy spike.

10. EUPHRÁSIA (*Eye-bright*).

1. *E. officinális* (Common Eye-bright).—The only British species. An elegant little plant, 2—6 inches high, with deeply-cut *leaves* and numerous white or purplish *flowers* variegated with yellow. On the mountains and near the sea, the stem is scarcely branched, and the leaves are fleshy; but in rich soil it assumes the

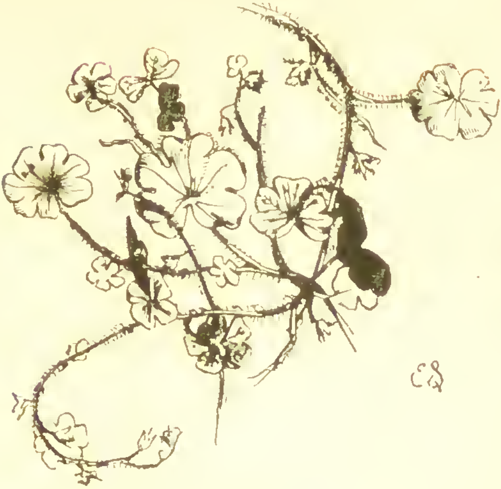


EUPHRÁSIA OFFICINÁLIS (*Common Eye-bright*).

habit of a minute shrub. An infusion of this plant makes a useful eye-water.—Fl. July, August. Annual.

11. Sibthórpia (*Cornish Money-wort*).

1. *S. Europæa* (Cornish Money-wort).—The only species. An elegant little plant, clothing the banks of springs and rivulets in most parts of Cornwall, and occasionally met with in some of the other southern counties. It approaches in habit *Hydrocótylé vulgáris* (Marsh Penny-wort), but is smaller, and has downy, notched leaves. The *stems*, which creep along the ground in tangled masses, are slender and thread-like; the *leaves* small and of a delicate green; the *flowers* very minute and of a pale flesh-colour.—Fl. June—September. Perennial.



SIBTHÓRPIA EUROPÆA (*Cornish Money-wort*).

12. VERÓNICA (*Speedwell*).

* *Flowers in terminal spikes or clusters.*

1. *V. serpyllifolia* (Thyme-leaved Speedwell).—*Leaves* egg-shaped, or elliptical, slightly notched, smooth; *capsules* inversely heart-shaped, with a long *style.*—Waste ground, common. A small plant, with prostrate, or slightly ascending stems, and several many-flowered spikes of very light blue flowers, striped with dark blue veins. A variety occurs, high up in the mountains, which might easily be mistaken for a distinct species; but on examination it will be found to differ only in the superior size of the flowers.—Fl. May—July. Perennial.

2. *V. arvensis* (Wall Speedwell).—*Leaves* egg-shaped, heart-shaped at the base, crenate, stalked; *bracts* sessile, longer than the flowers.—Walls and fields, common. Also a small plant with inconspicuous, light blue flowers, which are almost concealed among the upper leaves or

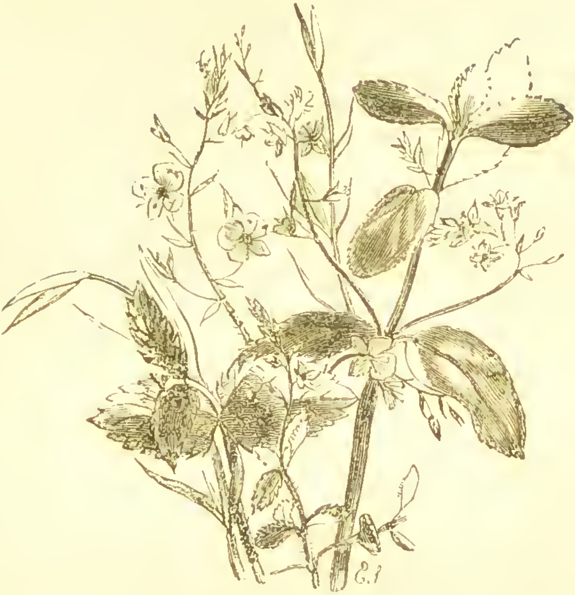
bracts. The whole plant is downy, and very frequently covered with dust.—Fl. April—September. Annual.

* To this group belong *V. spicáta* (Spiked Speedwell), found on chalky pastures, about Newmarket and Bury: *V. alpína* (Alpine Speedwell), a rare species, found only near the summits of the Highland mountains, distinguished from *V. serpyllifolia* by the deeper blue of its *flowers*, and by its very short *style*: *V. saxátilis* (Blue Rock Speedwell), also a rare mountainous species, with slender, woody *stems*, large brilliant blue *flowers*, and egg-shaped *capsules*: *V. fruticulósa* (Flesh-coloured Speedwell), found only on two of the Scotch mountains: *V. triphýllos*, also a rare species, growing in Norfolk and Suffolk, distinguished by its fingered *leaves*, and dark blue *flowers*: and *V. verna* (Vernal Speedwell), another rare species found only in Suffolk; it approaches *V. arvensis* in habit, but has pinnatifid *leaves*.

** * Clusters axillary.*

3. *V. Chamædrys* (Germander Speedwell).—*Stem* with two hairy opposite lines; *leaves* sessile, deeply serrated; *clusters* very long; *capsule* shorter than the calyx.—Hedge-banks, abundant. A well-known plant, which, under the popular names of *Blue Speedwell* and *Bird's-eye*, is a favourite with every one. No one can have walked in the country in Spring without admiring its cheerful bright blue flowers, but few perhaps have remarked the singular pair of hairy lines, which traverse the whole length of the stem, shifting from side to side whenever they arrive at a fresh pair of leaves. It is sometimes, but erroneously, called *Forget-me-not*.—Fl. May, June. Perennial.

4. *V. montána* (Mountain Speedwell).—*Stem* hairy all round; *leaves* stalked; *clusters* few-flowered; *capsule* much longer than the calyx.—Woods, common. Approaching the last in habit, but well distinguished by the above characters, and by its smaller, light blue flowers.—Fl. May, June. Perennial.



VERÓNICA CHAMÆDRYS (*Germander Speedwell*), V. OFFICINÁLIS (*Common Speedwell*), V. SCUTELLÁTA (*Marsh Speedwell*), and V. BECCABUNGA (*Brooklime*).

5. *V. officinális* (Common Speedwell).—Rough with short hairs; *stem* creeping; *leaves* elliptical, serrated; *flowers* in spikes.—Heaths and dry pastures, common. A hairy plant with prostrate stems and erect spike-like clusters of blue flowers; varying from 2 to 6 inches in length, according to soil. The leaves are astringent and bitter, and are sometimes made into tea.—Fl. May—August. Perennial.

6. *V. Beccabunga* (Brooklime). — Smooth; *leaves* elliptical, blunt, slightly serrated; *clusters* opposite; *stem* rooting at the base.—Brooks and ditches, common. A succulent plant about a foot high, with rather large, smooth leaves, and bright blue flowers, abounding in

situations favourable to the growth of Water-cresses and Water-parsnep.—Fl. June—August. Perennial.

7. *V. Anagallis* (Water Speedwell).—Smooth; *leaves* narrow, tapering, serrated; *clusters* opposite; *stem* erect. —Streams and ditches, common. Resembling the last, but distinguished by its larger size, narrow leaves, erect growth, and small flesh-coloured flowers. Fl. June—August. Perennial.

8. *V. scutelláta* (Marsh Speedwell).—Smooth; *leaves* linear, slightly toothed; *clusters* alternate; *fruit-stalks* bent back; *capsules* of 2 flat round lobes.—Marshes, not uncommon. A weak straggling plant, well distinguished by its very narrow leaves, and large flat capsules. Flowers pale pink.—Fl. June—August. Perennial.

* * * *Flowers solitary, axillary.*

9. *V. hederifolia* (Ivy-leaved Speedwell).—*Leaves* stalked, 5—7-lobed; *sepals* heart-shaped, fringed; *capsule* of two swollen lobes.—A common weed everywhere, bearing in the axil of each leaf a pale blue flower, the stalk of which is bent back when in fruit. The capsule is composed of 2 much swollen lobes, each of which contains 2 large black seeds.—Fl. all the summer. Annual.

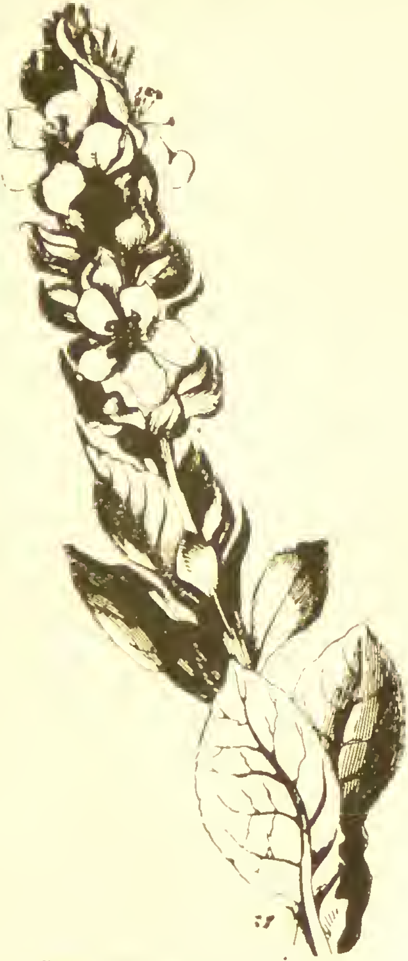
10. *V. agrestis* (Field Speedwell).—*Leaves* stalked, heart-shaped, deeply serrated; *sepals* oblong, blunt; *flower-stalks* as long as the leaves. —A common weed, with several long prostrate stems and small blue flowers. The capsule is composed of 2 swollen, keeled lobes, and each cell contains about 6 seeds.—Fl. all the summer. Annual.

* Closely allied to the preceding are *V. políta*, distinguished by its small *leaves*, which are shorter than the *flower-stalks*: and *V. Buxbaumii*, a stouter plant, with large bright blue *flowers*, and sharply keeled *capsules*.

13. VERBASCUM (*Mullein*).

1. *V. Thapsus* (Great Mullein).—*Leaves* woolly on both sides, running down the stem; *stem* simple;

flowers in dense spikes.—Road-sides, common. A stout herbaceous plant 2—5 feet high, remarkable for its large



VERBASCUM THAPSUS (*Great Mullein*).

flannel-like leaves and club-shaped spikes of yellow flowers. Two of the 5 stamens are longer than the rest, and hairy, the remaining three are smooth. This plant, together with Burdock and Fox-glove, is often introduced by painters into the foreground of landscapes. —Fl. July, August. Biennial.

2. *V. nigrum* (Dark Mullein).—*Leaves* oblong, heart-shaped, stalked, downy on both sides, especially below; *flowers* in dense tufts on a long crowded spike.—Hedges and road-sides, but of local occurrence. A handsome plant, not so stout as the preceding, and of a darker hue. The flowers, which are very numerous, are bright yellow, and the stamens are covered with purple hairs. —Fl. July—September. Biennial.

3. *V. Blattária* (Moth Mullein).—*Leaves* oblong, embracing the stem, smooth; *flowers* in loose tufts on a long interrupted spike.—Banks, rare, except in the West of England, where it is not unfrequent. A tall and somewhat slender plant, with shining, crenate leaves, the lowest of which are often lobed at the base, and with large, very handsome, yellow flowers. The stamens are covered with purple hairs.—Fl. July, August. Biennial.

* *V. virgátum* (Primrose-leaved Mullein), which is allied to the preceding, has the lower leaves downy; rare: *V. Lychnítis* has small cream-coloured flowers, and is chiefly found on a chalky soil: and *V. floccósum* is remarkable for the mealy down which clothes both sides of its leaves; it is found principally in Norfolk and Suffolk.

ORD. LXII.—LABIATÆ.—LABIATE TRIBE.

Calyx tubular, regular, or 2-lipped; *corolla* irregular, mostly 2-lipped (*labiate*), the lower lip largest, and 3-lobed; *stamens* 4, 2 longer than the others, or sometimes wanting; *ovary* deeply 4-lobed; *style* 1: *stigma* 2-cleft; *fruit* of 4 seeds, each of which is enclosed within a distinct shell or rind.—A large and strongly-marked natural order, comprising upwards of 2,000 species, which agree in having square stems, opposite leaves, labiate, or 2-lipped flowers, and a 4-lobed ovary with a single style arising from the base of the lobes. They are most abundant in temperate climates, and are remarkable for not possessing injurious properties in any single instance. Many are fragrant and aromatic: *Patchouli* is a favourite perfume, both in its natural state and when distilled. Lavender contains a fragrant volatile oil, which is valued both for its fragrance, and as a medicine for its stimulant properties. Several kinds of mint, as Peppermint and Pennyroyal, are much used in medicine. Spear-mint, Basil, Thyme, Marjoram, Savory, and Sage, are commonly used as pot-herbs, furnishing both agreeable and wholesome condiments. Horehound, Ground-Ivy, and Balm, are in rural districts popular remedies for chest complaints. Rosemary is remarkable for its undoubted power of encouraging the growth of the hair, and curing baldness, and is the active ingredient in most good pomatums; an infusion of it prevents the hair from uncurling in damp weather; and it is one of the plants used in the preparation of Hungary water, and Eau de Cologne. The admired flavour of Narbonne honey is ascribed to the bees feeding on the flowers of this plant, as that of the honey of Hymettus is indebted for its flavour to Wild Thyme. Several species of Sage (*Salvia*) are also cultivated for the beauty of their flowers.

* *Stamens* 2.

1. Lýcopus (Gipsy-wort).—*Calyx* 5-toothed; *corolla* 4-cleft, nearly regular. (Name in Greek signifying a *Wolf's-foot*, from a fancied resemblance in the leaves.)

2. Salvia (Sage).—*Calyx* 2-lipped; *corolla* gaping; *filaments* forked. (Name from the Latin *salveo*, to be well, from the healing properties of the genus.)

*** Stamens 4.*

† Corolla nearly regular, its tube scarcely longer than the calyx.

3. MENTHA (Mint).—*Calyx* equal, 5-toothed ; *corolla* 4-cleft, with a very short tube. (Name, the Latin name of the plant.)

†† Corolla 2-lipped, lips nearly equal in length.

4. THYMUS (Thyme).—*Calyx* 2-lipped, 10—13-ribbed, the throat hairy ; *corolla* with the upper lip notched, the lower 3-cleft ; *flowers* in heads, or whorls. (Name, the Latin name of the plant.)

5. ORÍGANUM (Marjoram).—*Calyx* 5-toothed, 10—13-ribbed, the throat hairy ; *flowers* in spikes, which are imbricated with bracts. (Name from the Greek *oros*, a mountain, and *ganos*, joy, from the favourite station of the family.)

††† Corolla with the upper lip very short, or wanting.

6. ÁJUGA (Bugle).—*Calyx* 5-cleft ; *corolla* with a long tube, the upper lip very short, lower 3-cleft. (Name said to be corrupted from the Latin *Abiga*, an allied plant.)

7. TEUCRIUM (Germander).—*Calyx* 5-cleft ; *corolla* with the upper lip deeply 2-cleft, lower 3-cleft. (Name from *Teucer*, who is said to have been the first to use it in medicine.)

†††† Corolla 2-lipped, lips unequal ; calyx 5-toothed ; stamens longer than the tube of the corolla.

8. BALLÓTA (Black Horehound).—*Calyx* funnel-shaped, with 5 sharp equal teeth ; *corolla* with the *upper lip* erect, concave ; *lower* 3-lobed, the middle lobe largest, heart-shaped ; two front *stamens* the longest. (Name in Greek signifying *rejected*, from the offensive smell of the plant.)

9. LEONÚRUS (Motherwort).—*Calyx* with 5 prickly

teeth ; *corolla* with the *upper lip* nearly flat, very hairy above ; *anthers* sprinkled with hard, shining dots ; two front *stamens* the longest. (Name in Greek signifying a *Lion's tail*, from some fancied resemblance in the plant.)

10. GALEÓBDOLON (Weasel-snout).—*Calyx* with 5 ribs, and as many nearly equal teeth ; *corolla* with the *upper lip* arched, entire ; *lower* in 3 nearly equal acute lobes ; two front *stamens* the longest. (Name in Greek denoting that the plant has the *smell* of a *weasel.*)

11. GALEOPSIS (Hemp-nettle).—*Calyx* bell-shaped, with 5 prickly teeth ; *corolla* with an inflated throat ; *upper lip* arched, *lower* 3-lobed, with 2 teeth on its upper side ; two front *stamens* the longest. (Name in Greek denoting that the flower bears some *resemblance* to a *weasel.*)

12. LÁMIUM (Dead-nettle).—*Calyx* bell-shaped, with 10 ribs, and 5 teeth ; *corolla* with an inflated tube ; *upper lip* arched, *lower* 2-cleft, with 1 or 2 teeth at the base on each side ; two front *stamens* the longest. (Name from the Greek *laimos,* a throat, from the shape of the flower.)

13. BETÓNICA (Betony).—*Calyx* egg-shaped, with 10 ribs, and 5 sharp teeth ; tube of the *corolla* longer than the calyx ; *upper lip* slightly arched, *lower* flat, of 3 unequal lobes ; two front *stamens* the longest. ("Name altered from *Bentonic,* in Celtic ; *ben* meaning head, and *ton,* good, or tonic."—*Sir W. J. Hooker.*)

14. STACHYS (Woundwort).—*Calyx* tubular, bell-shaped, with 10 ribs, and 5 equal teeth ; tube of the *corolla* as long as the calyx ; *upper lip* arched, *lower* 3-lobed, the side lobes bent back before withering ; two front *stamens* the longest. (Name in Greek signifying a *bunch,* from the mode of flowering.)

15. NÉPETA (Cat-mint, Ground Ivy).—*Calyx* tubular, oblique, 5-toothed ; tube of the *corolla* longer than the calyx ; *upper lip* flat, notched, *lower* 3-lobed, two front *stamens* the shortest. (Name of doubtful origin.)

††††† *Corolla 2-lipped, lips unequal; calyx 5—10-toothed; stamens shorter than the tube of the corolla.*

16. Marrúbium (White Horehound).—*Calyx* with 5 or 10 teeth, the throat hairy; tube of the *corolla* longer than the calyx; *upper lip* straight, very narrow, deeply 2-cleft, *lower* 3-lobed. (Name of doubtful origin.)

†††††† *Corolla 2-lipped, the lips unequal; calyx 2-lipped.*

17. Calamintha (Calamint, Wild Basil, Basil Thyme).—*Calyx* 13-nerved, tubular, swollen underneath; *upper lip* 3-cleft; *lower* 2-cleft, throat mostly hairy; *tube* of the *corolla* straight; *upper lip* nearly plane, *lower* spreading, 3-cleft. (Name, the Greek name of some allied plant.)

18. Melittis (Wild Balm).—*Calyx* bell-shaped, much wider than the tube of the corolla, variously lobed; *upper lip* of the *corolla* nearly flat, entire, *lower* with 3 rounded, nearly equal lobes. (Name from the Greek *melitta*, a bee, from the quantity of honey contained in the tube.)

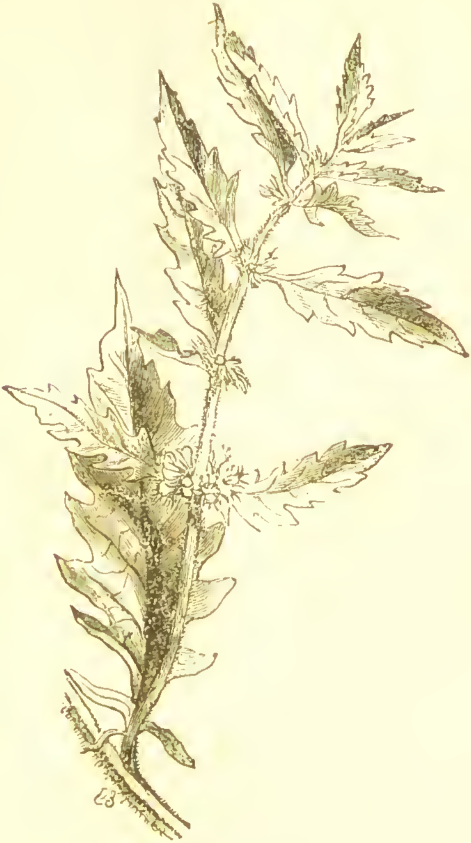
19. Prunella (Self-heal).—*Calyx* flattened, and closed when in fruit; *filaments* 2-forked. (Name from a German word for the *quinsy*, for which complaint it was considered a specific.)

20. Scutellaria (Skull-cap.)—*Upper lip* of the calyx bulged outward about the middle, and finally closing down like a lid over the fruit; tube of the *corolla* much larger than the calyx. (Name from the Latin *scutella*, a little cup, which the calyx somewhat resembles.)

1. Lýcopus (*Gipsy-wort*).

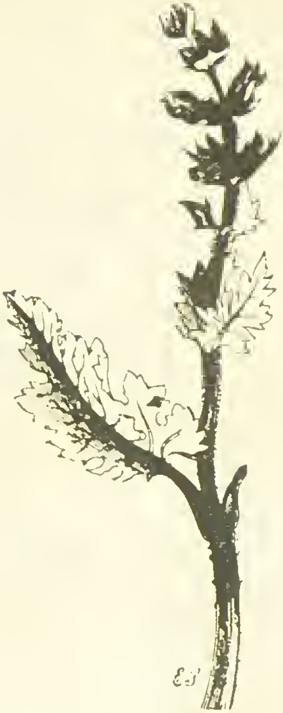
1. *L. Europæus* (Common Gipsy-wort).—The only British species.—On the banks of rivers and ditches, frequent. An aquatic plant, with erect, scarcely branched

stems, 2 feet high, deeply cut, pointed, opposite *leaves,* and small, pale, flesh-coloured *flowers,* growing in crowded



LYCOPUS EUROPÆUS (*Common Gipsy-wort*).

whorls in the axils of the upper leaves.—Fl. July, August. Perennial.



SALVIA VERBENÁCA (*Clary, or Wild Sage*).

2. Salvia (*Sage*).

1. *S. Verbenáca* (Clary, or Wild Sage).—*Leaves* oblong, blunt, heart-shaped at the base, wavy at the edge, and crenate; *corolla* scarcely longer than the calyx.—Dry pastures, especially near the sea, or on a chalky soil. An aromatic herbaceous plant, 1—2 feet high, rendered conspicuous by its long spikes of purple-blue flowers, the calyx of which is much larger than the corolla. The leaves are few, and much wrinkled, and at the base of each flower are 2 heart-shaped, fringed, acute bracts.—Fl. June—August. Perennial.

* *S. pratensis* (Meadow Clary), which is not considered a native plant, occurs in Kent, and is distinguished by its *corolla* being twice as long as the calyx.

MENTHA AQUATICA. (*Hairy Mint*).

3. MENTHA (*Mint*).

1. *M. sylvestris* (Horse Mint).—*Leaves* egg-shaped, tapering to a point, serrated, downy, hoary beneath; *flowers* in a thick cylindrical spike; *bracts* awl-shaped;

calyx very hairy.—Damp waste ground, frequent. A strong-scented plant, usually growing in masses, with downy foliage very white beneath, and rather slender spikes of lilac flowers, which are often interrupted below. —Fl. August, September. Perennial.

2. *M. rotundifolia* (Round-leaved Mint).—*Leaves* sessile, broadly elliptical, blunt, much wrinkled, nearly smooth above, shaggy beneath ; *flowers* in dense, cylindrical spikes.—Waste ground, not common. The spikes in this species are more slender than in the last, the stem is somewhat woody, and the leaves are much wrinkled and remarkably blunt ; the scent is strong and aromatic, but scarcely agreeable.—Fl. August, September. Perennial.

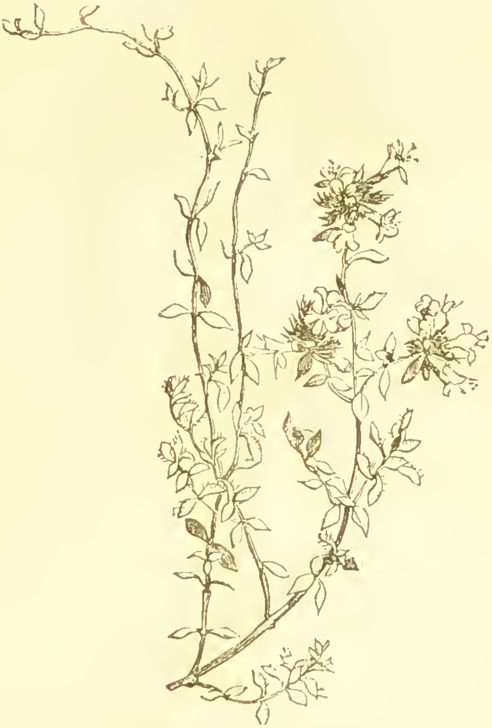
3. *M. aquática* (Hairy Mint).—*Leaves* stalked, egg-shaped, serrated, downy ; *flowers* at the summit of the stem in dense whorls, the highest whorls forming a head.—Banks of rivers and marshes, abundant. The commonest of the mints, 1—2 feet high, growing in extensive masses in wet places, and well distinguished by its downy foliage, and whorls of lilac flowers, which, towards the summit of the stem, are crowded into heads ; the scent is strong and unpleasant.—Fl. August, September. Perennial.

4. *M. arvensis* (Corn Mint).—*Leaves* stalked, egg-shaped, serrated, hairy ; *flowers* in dense, distant whorls ; *calyx* bell-shaped.—Corn-fields, common. A branched, downy plant, 6—12 inches high, with whorls of small lilac flowers, and a strong unpleasant smell.—Fl. Aug., September. Perennial.

5. *M. Pulégium* (Penny-royal).—*Stem* prostrate ; *leaves* egg-shaped, nearly smooth ; *flowers* in distant whorls ; *calyx* downy, its mouth closed with hairs.—Wet heathy places, not common. The smallest of the family, and very different in habit from any of the others ; the stems are prostrate, the flowers purple, and the whole plant of an agreeable perfume and flavour. It is commonly cultivated in cottage gardens for the

sake of being made into tea, which is a favourite remedy for colds.—Fl. July, August. Perennial.

* Several other species and varieties of Mint are described by botanists, some of which are scarcely distinct from the preceding; others, such as Pepper-Mint, Spear-Mint, and Bergamot-Mint, are not really wild, but have escaped from cultivation.



THYMUS SERPYLLUM (*Wild Thyme*)

4. THYMUS (*Thyme*).

1. *T. Serpyllum* (Wild Thyme).—The only British species.—Dry heathy places, common. A well-known

and favourite little plant, with woody stems, small fringed leaves, and heads of purple flowers. The whole plant diffuses a fragrant, aromatic perfume, which, especially in hot weather, is perceptible at some distance.

ORÍGANUM VULGÁRÉ (*Common Marjoram*).

5. ORÍGANUM (*Marjoram*).

1. *O. vulgáré* (Common Marjoram).—The only British species.—Dry bushy places, especially on chalk or lime-

stone, frequent. Growing about a foot high, and distinguished by its egg-shaped downy *leaves*, and heads of purple *flowers*, which are crowded into the form of a *cyme*. The *bracts* are longer than the flowers, and tinged of the same colour, both being, while the plant is in bud, of a deep red hue. The whole plant is fragrant and aromatic, and is frequently cultivated as a pot-herb.—Fl. July, August. Perennial.

AJUGA REPTANS (*Common Bugle*)

6. AJUGA (*Bugle*).

1. *A. reptans* (Common Bugle).—*Stem* erect, with creeping *scions* at the base; *lower leaves* stalked, *upper* sessile; *flowers* whorled, crowded into a spike.—Moist meadows and woods, common. Well marked by its solitary tapering flower-stalk, 6—9 inches high, and

creeping scions. The flowers are blue, and the upper leaves, or bracts, are tinged with the same colour. A white variety is sometimes found.—Fl. May, June. Perennial.

2. *A. Chamǽpitys* (Ground Pine).—*Stem* much branched, spreading; *leaves* hairy, deeply 3-cleft, the segments linear; *flowers* solitary, axillary.—Sandy fields, in Kent, Essex, and Surrey. A tufted herbaceous plant, 4—6 inches high, with reddish-purple viscid stems, finely cut leaves, and yellow flowers spotted with red. Its habit is very different from that of the preceding.—Fl. May, June. Perennial.

* *A. pyramidális* (Pyramidal Bugle) is a rare Highland species, distinguished from common Bugle by being without *scions*, and by bearing its *whorls* of flowers crowded into 4-sided *spikes*.

7. Teucrium (*Germander*).

1. *T. Scorodónia* (Wood-Germander, Wood-Sage).—*Stem* erect; *leaves* heart-shaped, oblong, stalked, wrinkled; *flowers* in 1-sided, spike-like clusters.—A common woodland plant, about 2 feet high, with sage-like leaves, and several 1-sided clusters of small greenish-yellow flowers. The whole plant is very bitter, and has been used as a substitute for hops.—Fl. June—August. Perennial.

* *T. Scórdium* (Water Germander) is a rare species, growing in marshy places. It is only a few inches high, and bears its *flowers*, which are purple, in distant *whorls*. This plant was formerly employed in medicine as a tonic, and a protection against infectious diseases; now, however, it is scarcely used except by rustic practitioners. *T. Chamœdrys* is a doubtful native, and is also rare: the *flowers* are purple, with dark lines, large and handsome, and grow 3 together in the axils of the leaves. Several other species are frequently cultivated in gardens as ornamental plants.

TEUCRIUM SCORODÓNIA (*Wood Germander, Wood Sage*).

8. BALLÓTA (*Black Horehound*).

1. *B. Nigra* (Black Horehound).—The only British species.—Waste ground, common. A tall bushy plant, with downy, wrinkled, crenate *leaves*, and numerous purple *flowers*. The odour of the whole plant is pecu-

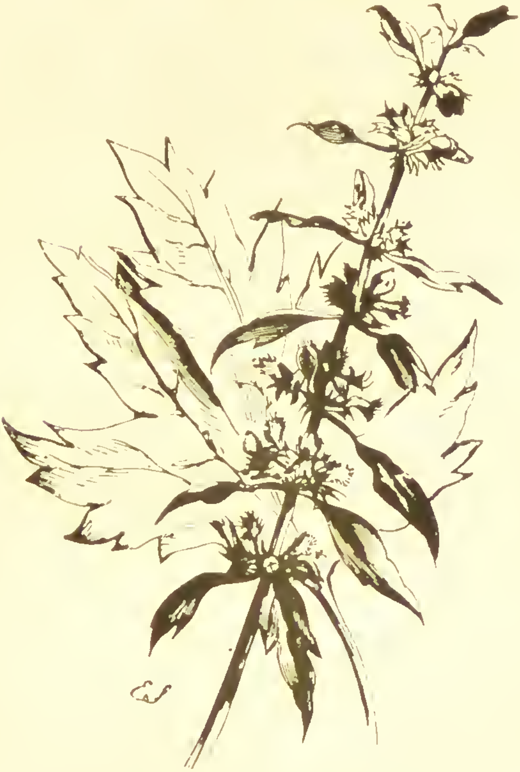
BALLÓTA NIGRA (*Black Horehound*).

liarly strong and offensive.—Fl. July, September. Perennial.

9. LEONÚRUS (*Motherwort*).

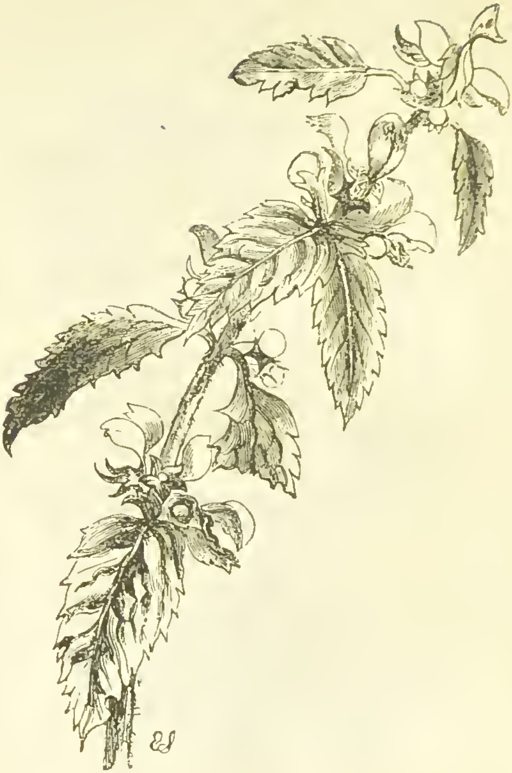
1. *L Cardíaca* (Common Motherwort).—The only British species.—Hedges and waste places, not common. Distinguished from all other British plants of the Order by its *leaves*, which are deeply cut into 5 or 3 narrow,

pointed segments, and by the prickly *calyx-teeth* of its *flowers*, which grow in whorls. When not in flower it resembles Mugwort (*Artemísia vulgáris*) in habit. The



LEONÚRUS CARDÍACA (*Common Motherwort*).

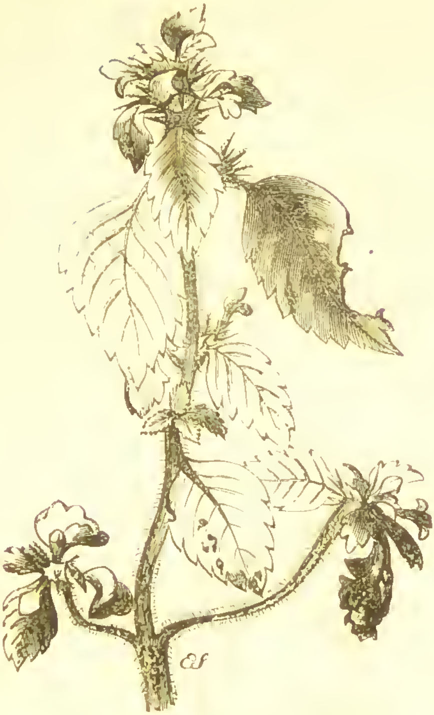
stems are 2—3 feet high, branched, principally below; the upper *leaves* are very narrow and entire; the *flowers* light purple.—Fl. August. Perennial.



GALEÓBDOLON LÚTEUM (*Yellow Weasel-snout, Archangel, Yellow Dead-nettle*).

10. Galeóbdolon (*Weasel-snout*).

1. *G. lúteum* (Yellow Weasel-snout, Archangel, Yellow Dead-nettle).—The only species.—Damp woods and hedges; not unfrequent. Resembling in habit the common White Dead-nettle, but rather taller; the *leaves* are narrow and more pointed; the *flowers*, which grow in *whorls*, and are large and handsome, are yellow, blotched with red.—Fl. May—July. Perennial.



GALEOPSIS TETRÁHIT (*Common Hemp-nettle*).

11. Galeopsis (*Hemp-nettle*).

1. *G. Tetráhit* (Common Hemp-nettle).—*Stem* bristly, swollen below the joints; *leaves* bristly, serrated.—Cornfields, common. An erect, slender plant, 2 feet high, with opposite spreading branches, numerous whorls of flowers which are variegated with light purple and yellow, and sometimes nearly white. The stems are remarkably swollen beneath every pair of leaves, and the whorls of flowers are rendered conspicuous by the long sharp calyx-teeth.—Fl. July—September. Annual.

2. *G. Ládanum* (Red Hemp-nettle).—*Stem* and *leaves* downy with soft hair; *stem* not swollen below the joints.—Gravelly and sandy fields; not unfrequent. Resembling the last, but smaller. The flowers are purple, mottled with crimson.—Fl. August—September. Annual.

* *G. versícolor* (Large-flowered Hemp-nettle) is a plant of local occurrence, abundant in the Highlands, resembling *G. Tetráhit* in character; the *flowers* are large, yellow, with usually a broad purple spot upon the lower lip; *G. villósa* (Downy Hemp-nettle) is more like *G. Ládanum*, the *leaves* being soft and downy, and the *stem* not swollen; the *flowers* are large, pale yellow.

LÁMIUM PURPUREUM (*Purple Dead-nettle*).

12. LÁMIUM (*Dead-nettle*).

1. *L. album* (White Dead-nettle).—*Leaves* heart-shaped, tapering to a point, serrated, stalked.—Hedges and waste ground, abundant. A common, but not in-

elegant weed, well marked by its large pure white flowers and black stamens. So closely does the foliage of this plant resemble that of the Stinging Nettle, that many persons are afraid to handle it, supposing it to be a Nettle in flower. The flowers of the latter, however, are green, and so small, that they would be passed unnoticed but for their growing in spiked panicles near the summit of the stem. The square stem of the Dead-nettle is enough to distinguish it at any stage of its growth.—Fl. all the summer. Perennial.

2. *L. purpúreum* (Purple Dead-nettle).—*Leaves* heart or kidney-shaped, blunt, crenate, stalked.—A common weed in cultivated ground, and by way-sides, distinguished by the purple tinge of its foliage, crowded upper *leaves*, and small purple *flowers*.—Fl. all the summer. Perennial.

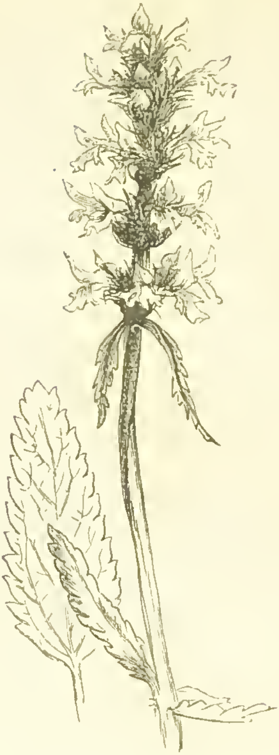
* Allied to *L. album* is *L. maculátum* (Spotted Dead-nettle), distinguished by its *leaves*, each with a white blotch, and large purple *flowers* : two other species occur in similar situations with *L. purpureum*, and also resemble it in habit ; namely, *L. amplexicaulé* (Henbit-nettle), which has round, deeply-cut leaves, of which the upper are sessile : *L. incísum* (Cut-leaved Dead-nettle), the leaves of which are all deeply cut and stalked ; both of these have small purple flowers.

13. BETÓNICA (*Betony*).

1. *B. officinális* (Wood Betony).—The only British species.—A common and very pretty woodland plant, about two feet high, bearing an interrupted *head* or *spike* of light purple *flowers* on a long and slender *stem*. There are always 2 or 3 pairs of oblong crenate sessile *leaves* beneath the divisions of the spike ; the lower leaves are all stalked.—Fl. July, August. Perennial.

14. STACHYS (*Wound-wort*).

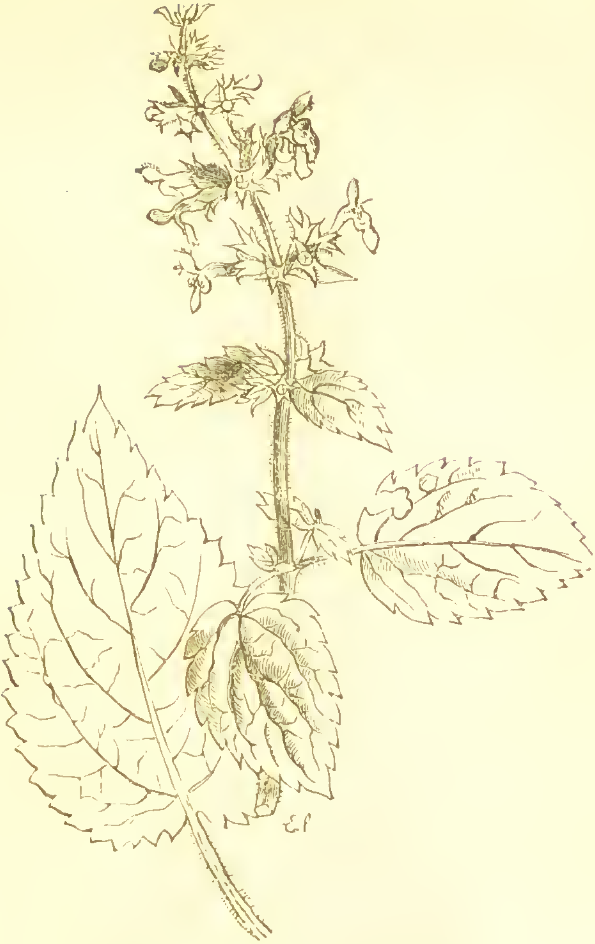
1. *S. sylvática* (Hedge Wound-wort).—*Flowers* 6 in a whorl ; *stem* erect ; *leaves* heart-shaped, acute, stalked.—



BETÓNICA OFFICINÁLIS (*Wood Betony*).

Woods and hedges, common. A branched hairy plant, 2—3 feet high, with numerous whorls of dark but dull purple flowers, almost forming a spike. There are rarely more or less than 6 flowers in a whorl, and the outline of the leaves is not at all oblong. When in seed the calyx-teeth are rigid.—Fl. July, August. Perennial.

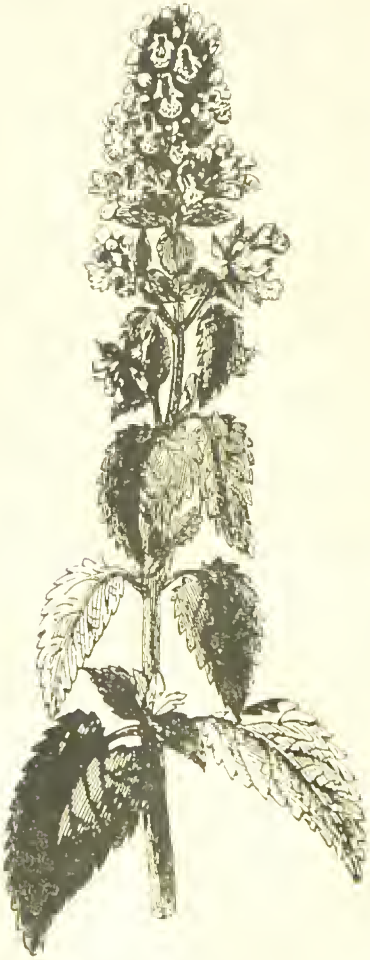
2. *S. palustris* (Marsh Wound-wort).—*Flowers* 6 in a whorl; *leaves* narrow-oblong, heart-shaped at the base, sessile.—Marshes, common. Taller and stouter than the last, and distinctly marked by its oblong leaves tapering to a point, and light purple flowers.—Fl. July—August. Perennial.



STACHYS SYLVÁTICA (*Hedge Wound-wort*).

3. *S. arvensis* (Corn Wound-wort).—*Flowers* 6 in a whorl; *stem* spreading; *leaves* heart-shaped, obtuse; *corolla* scarcely longer than the calyx.—Corn-fields, common. A small plant, 6—8 inches high, occurring abundantly as a weed in cultivated land; distinguished

from the preceding by its smaller size, and from the other *labiate* flowers which grow in such situations, by its whorls of 6 light purple flowers.—Fl. July—September. Annual.

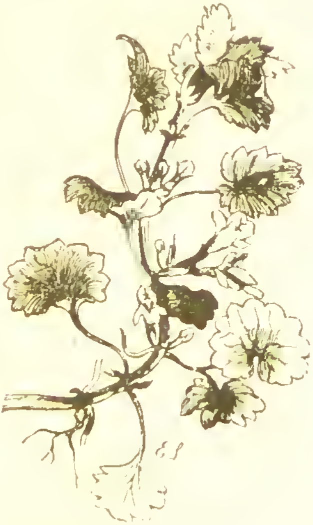


NÉPETA CATÁRIA (*Cat Mint*).

* *S. ambigua* (Ambiguous Wound-wort) approaches *S. palustris*, from which it is distinguished by its *stalked leaves;* it is of local occurrence, but it is said to be abundant in the Highlands; *S. Germánica* (Downy Wound-wort) is a woolly plant having many flowered *whorls;* it is found on a chalky soil in Oxfordshire, Bedfordshire, and Berkshire.

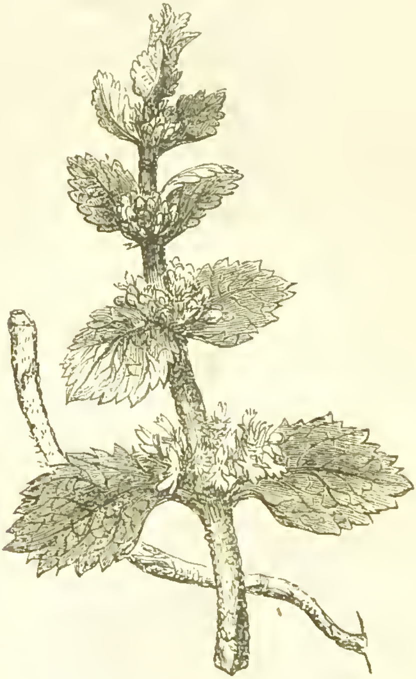
15. NÉPETA (*Cat-mint, Ground Ivy*).

1. *N. Catária* (Cat-mint).—*Stem* erect, branched, 2—3 feet high, white with mealy down; *leaves* whitish beneath; the *flowers*, which are small and whitish, dotted with crimson, grow in dense *whorls*, which towards the summit of the stem are so close as almost to form a *spike*.—Hedges and waste ground, not common. The whole plant has a strong aromatic odour, resembling Penny-royal, and peculiarly grateful to cats, whence it derives its name.—Fl. July, August. Perennial.



NÉPETA GLECHÓMA (*Ground Ivy*).

2. *N. Glechóma* (Ground Ivy).—*Stem* trailing; *flowers* 3 or 4 together, axillary.—Hedges and waste ground, abundant. A favourite spring flower, with creeping *stems,* kidney-shaped, crenate, roughish *leaves,* and bright purple-blue *flowers* which grow in threes in the axils of the leaves. The whole plant has a strong aromatic odour, which, though scarcely fragrant, is far from disagreeable. In rural districts the leaves are often dried and made into tea. Described by some botanists under the name of *Glechóma hederácea.*—Fl. April—June. Perennial.



MARRÚBIUM VULGÀRÉ (*White Horehound*).

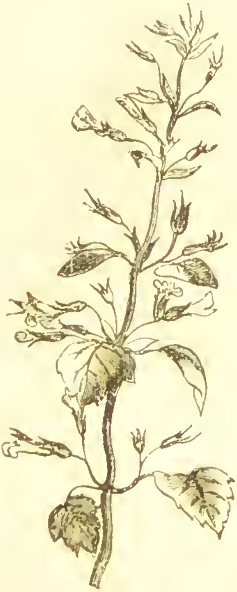
16. MARRÚBIUM (*White Horehound*).

1. *M. vulgáré* (White Horehound).—The only British species.—Waste ground, not common. Well distin-

guished by its bushy *stems* 1—2 feet high, which are covered with white woolly down, by its wrinkled *leaves*, and its dense whorls of small white *flowers*, of which the *calyx-teeth* are sharp and hooked. The whole plant is aromatic and bitter, and is a common remedy for coughs.—Fl. August. Perennial.

17. CALAMÍNTHA (*Calamint, Basil Thyme, Wild Basil*).

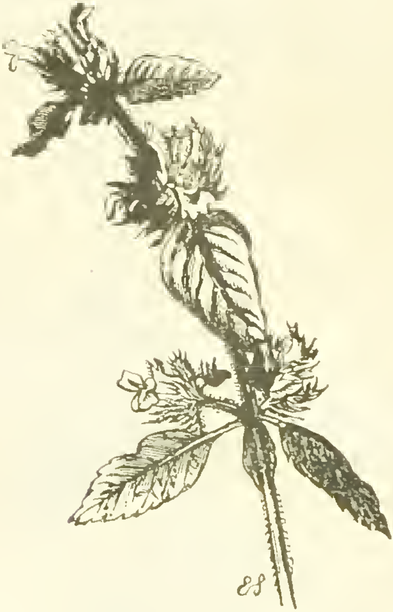
1. *C. Ácinos* (Basil Thyme).—*Stem* ascending, branched; *leaves* oblong, on short stalks, serrated, acute.—Dry gravelly places, not common.—A small bushy herb 6—8 inches high, with hairy, egg-shaped *leaves* and purple *flowers*, which grow in *whorls* as well as at the summit of the *stem*. The *calyx* is distinctly



CALAMÍNTHA OFFICINÁLIS (*Common Calamint*).

2-lipped, the *lower lip* bulged at the base. Described by some botanists under the name of *Ácinos vulgáris.*—Fl. July, August. Perennial.

2. *C. officinális* (Common Calamint).—*Leaves* stalked, egg-shaped, slightly serrated ; *flowers* stalked, in forked axillary *cymes.*—Way-sides and hedges, not uncommon. An erect, bushy plant, with downy stems and foliage, and numerous, light purple flowers, which have small pointed bracts in the forks of their stalks. The whole plant has a sweet aromatic flavour and makes a pleasant tea.—Fl. July, August. Perennial.

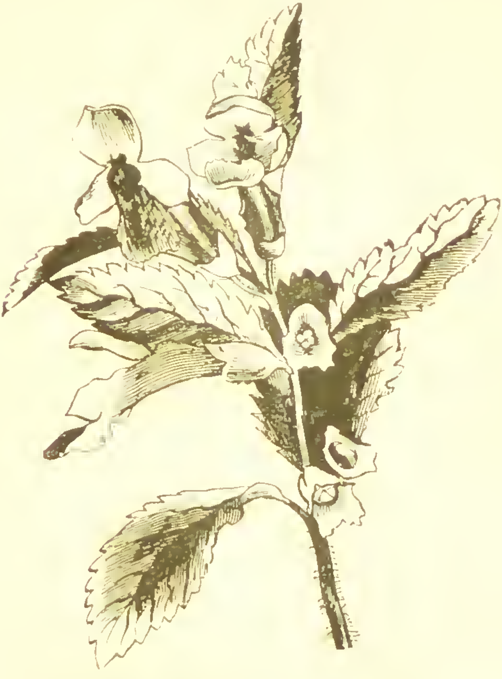


CALAMÍNTHA CLINOPÓDIUM (*Wild Basil*).

3. *C. Clinopódium* (Wild Basil).—*Calyx* scarcely bulged at the base ; *leaves* egg-shaped, stalked ; *flowers* in crowded compound whorls.—Bushy places, frequent. A straggling hairy plant, 1—2 feet high, with egg-shaped

leaves, several bristly whorls of stalked, purple *flowers*, and numerous, long, pointed *bracts.*—Aromatic and fragrant. Described by some botanists under the name of *Clinopódium vulgáré.*—Fl. July, August. Perennial.

* *C. Népeta* (Lesser Calamint) is a smaller plant, with *leaves* which are more strongly serrated, and bears its flowers on longer stalks. It is perhaps scarcely distinct from *C. officinális.*

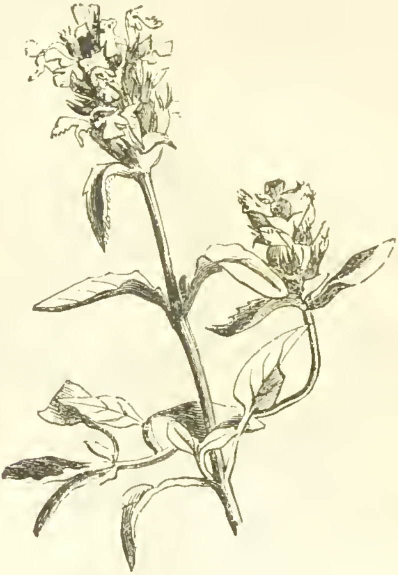


MELITTIS MELISSOPHYLLUM (*Wild Balm*).

18. MELITTIS (*Wild Balm*).

1. *M. Melissophyllum* (Wild Balm).—The only British species.—Woods in the south and west of England.

A very handsome plant, about a foot high, with large, hairy, serrated *leaves* and conspicuous white *flowers* blotched with bright rose-colour. The foliage while fresh has an offensive smell, but in drying acquires the flavour of new hay or Woodruff.—Fl. June, July. Perennial.



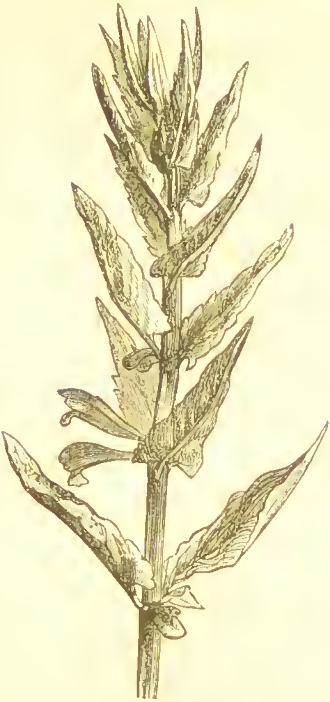
PRUNELLA VULGÁRIS (*Self-heal*).

19. PRUNELLA (*Self-heal*).

1. *P. vulgáris* (Self-heal).—The only British species. —Pastures and waste ground, very common. Well distinguished by its flattened *calyx* and whorls of purplish-blue *flowers*, which are collected into a *head*, having a pair of *leaves* at the base, and two taper-pointed *bracts* beneath each *whorl*.—Fl. July, August. Perennial.

20. SCUTELLARIA (*Skull-Cap*).

1. *S. galericuláta* (Greater Skull-Cap).—*Leaves* oblong, tapering, heart-shaped at the base, notched;



SCUTELLARIA MAJOR (*Greater Skull-cap*).

flowers in pairs, axillary.—Banks of rivers and ponds, frequent. A handsome plant, 12—18 inches high, with rather large, bright blue *flowers*, the tube of which is much longer than the *calyx*. Soon after the *corolla* has fallen off, the upper lip of the *calyx* closes on the lower, and gives it the appearance of a capsule with a lid; when the seed is ripe it opens again.—Fl. July—September. Perennial.

* *S. minor* (Lesser Skull-Cap) is a small bushy herb, 4—6 inches high, with egg-shaped *leaves*, of which the lower ones are often toothed at the base; the *flowers* are small, of a dull purple colour; the *calyx* is the same as in the last. It grows in bogs, but is not common, except in the West of England.

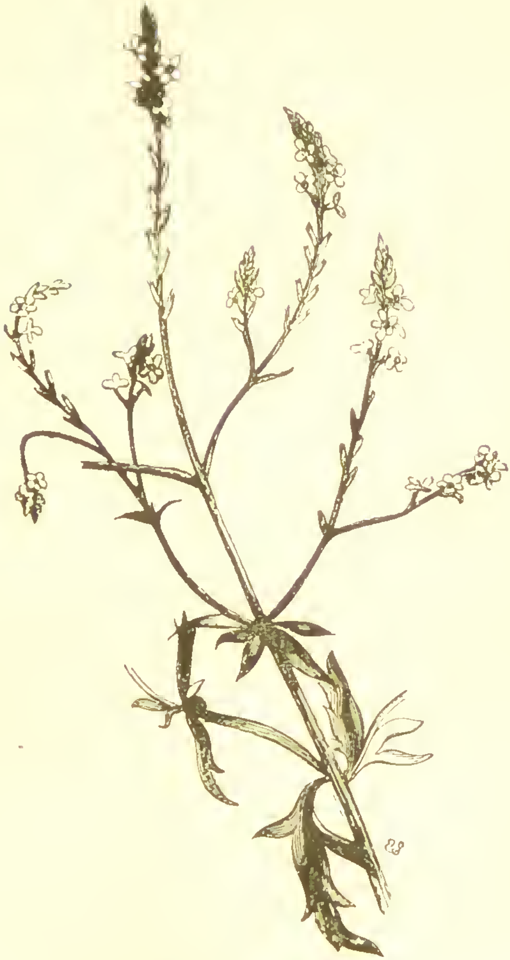
ORD. LXIII.—VERBENACEÆ.—VERVAIN TRIBE.

Calyx tubular, not falling off; *corolla* irregular, with a long tube; *stamens* 4; 2 longer than the others, rarely 2 only; *ovary* 2- or 4-celled; *style* 1; *stigma* 2-cleft; *seeds* 2 or 4, adhering to one another.—A tribe of plants, closely allied to the *Labiátæ*, comprising trees, shrubs and herbaceous plants, having opposite leaves, and irregular flowers, which usually grow in spikes or heads. Many are aromatic and fragrant, and some few are employed as medicines, but are not highly valued. Great virtues were, in ancient times, attributed to the common *Vervain*, insomuch that it was accounted a holy plant, and was used to sweep the tables and altars of the gods. It is now little thought of. *Aloysia citriodóra*, formerly called *Verbéna triphylla*, is the Lemon-plant of gardens, well known for the delicious fragrance of its rough, narrow leaves. Many varieties of *Verbéna* are also cultivated for the sake of their ornamental flowers, which for brilliancy of colouring are scarcely surpassed. But by far the most remarkable plant in this Order is the Teak-tree (*Tectoria grandis*), which inhabits the mountainous parts of eastern Asia. The trunk of this tree sometimes attains the height of two hundred feet, and its leaves are twenty inches long by sixteen broad. The timber abounds in particles of flint, and somewhat resembles mahogany in colour, but is lighter and stronger. For ship-building it is thought to be superior to Oak.

1. VERBÉNA (Vervain).—*Calyx* 5-cleft: *corolla* unequally 5-cleft; *stamens* shorter than the tube of the corolla. (Name, the Latin name of the plant.)

1. VERBÉNA (*Vervain*).

1. *V. officinális* (Common Vervain).—The only British species.—Waste ground, common. A slender plant, 1—



VERBÉNA OFFICINÁLIS (*Common Vervain*).

2 feet high, with but few *leaves*, which are roughish 3-cleft, or simply cut. The *flowers*, which are very small,

are lilac, and grow in terminal very slender *spikes.*—This plant was held in great veneration by the ancients, being used in sacrifices and at other religious ceremonies. The cultivated species are showy plants, remarkable for the brilliant colours of their flowers. They are readily propagated by cuttings, which should be planted in fine sand during autumn, and protected during winter. New varieties are constantly being raised from seed.—Fl. July, August. Perennial.

ORD. LXIV.—LENTIBULARIACEÆ.—BUTTERWORT TRIBE.

Calyx divided, not falling off; *corolla* irregular, 2-lipped, spurred; *stamens* 2, sometimes 4, 2 long and 2 short; *ovary* 1-celled; *style* 1, very short; *stigma* 2-lipped, the lower lip smallest; *capsule* 1-celled, 2-valved, many-seeded.—Herbaceous aquatic plants, bearing either undivided leaves, which spring directly from the root, or compound root-like leaves, with numerous small bladders or air-vessels. There are but four genera in the Order, two of which contain British examples: Butterwort (*Pinguícula*), small plants with handsome purple flowers and concave leaves, of a texture which resembles greasy parchment; and Bladderwort (*Utricularia*), submersed plants with finely divided leaves, bearing minute bladders, and yellow flowers, which rise above the surface of the water to open. "*Pinguícula vulgáris* (Common Butterwort) has the property of giving consistence to milk, and of preventing its separating into either whey or cream. Linnæus says that the solid milk of the Laplanders is prepared by pouring it, warm from the cow, over a strainer on which fresh leaves of Pinguicula have been laid. The milk, after passing among them, is left for a day or two to stand, until it begins to turn sour; it throws up no cream, but becomes compact and tenacious, and most delicious in taste. It is not necessary that fresh leaves should be used after the milk is once turned: on the contrary, a small portion of this solid milk will act upon that which is fresh, in the manner of yeast."—(*Lindley.*)

1. PINGUÍCULA (Butterwort).—*Calyx* 2-lipped, *upper lip* 3-cleft, lower 2-cleft; *corolla* gaping, spurred. (Name from the Latin *pinguis*, fat, the leaves being greasy to the touch.)

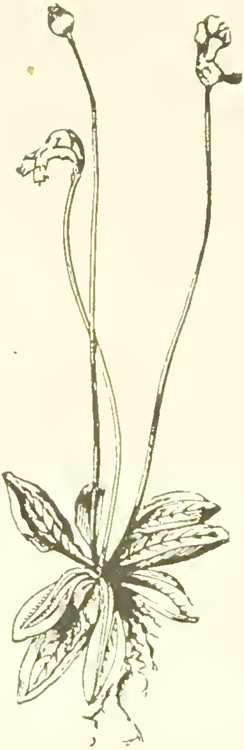
2. UTRICULARIA (Bladderwort).—*Calyx* of 2 equal sepals; *corolla* personate, spurred. (Name from the Latin *Utrículus*, a little bladder, from the little air-bladders which grow among the leaves.)

1. PINGUÍCULA (*Butterwort*).

1. *P. vulgáris* (Common Butterwort).—*Spur* tapering; segments of the *corolla* very unequal, entire.—Bogs and heaths, principally in the North. A singular and very beautiful plant. The leaves, which spring all from the roots, have the edges rolled in; they are of a peculiar, parchment-like hue, and have a frosted appearance. The flowers are large, purple, very handsome, and grow in a nodding manner, each on the summit of a delicate stem, 3—4 inches high, which springs directly from the root. The root is fibrous, and has a very loose hold on the soft ground in which it grows.—Fl. June. Perennial.

2. *P. Lusitánica* (Pale Butterwort).—*Spur* cylindrical, obtuse, curved downwards; segments of the *corolla* nearly equal; *leaves* and *flower-stalks* covered with short hairs.—Bogs in the western parts of England, in the North of Scotland, and in Ireland. Of the same habit as the last, but much smaller. The leaves are greenish white, and veined; the flowers light pink.—Fl. July—September. Perennial.

* *P. grandiflóra* (Large-flowered Butterwort) is a yet more beautiful plant than *P. vulgáris.* It is distinguished by its large, very irregular, purple *corolla*, the middle segment and spur of which are notched; it grows in bogs in the counties of Cork and Kerry, Ireland. *P.*



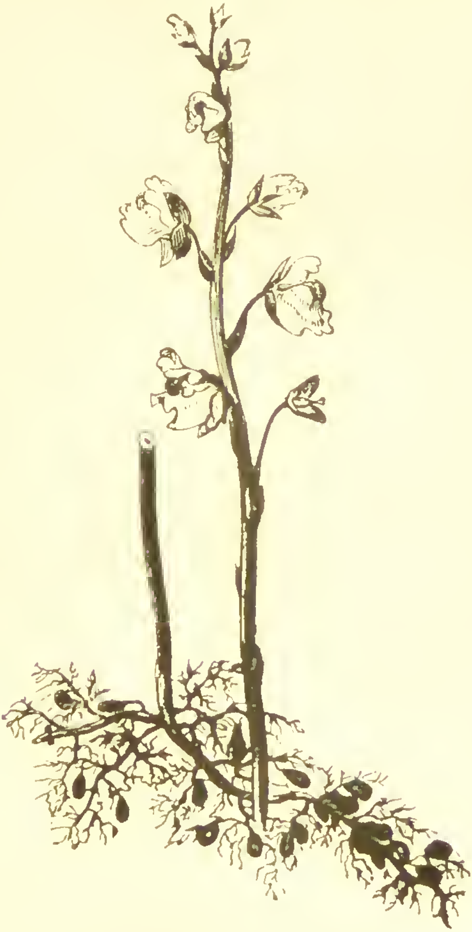
PINGUICULA LUSITÁNICA (*Pale Butterwort*).

alpína (Alpine Butterwort) is about the size of *P. Lusitánica;* the *flower-stalks* are smooth, and the *flowers* yellowish; it is very rare, being found only in bogs in Scotland and Ireland.

2. UTRICULÁRIA (*Bladderwort*).

1. *U. vulgáris* (Common Bladderwort).—Submersed. *Leaves* divided into numerous hair-like segments, and bearing small air-bladders; *lips* of the *corolla* about equal in length; spur conical.—Ditches and deep pools, not

very common. Before flowering, the stem and leaves float in the water by help of the minute bladders,



UTRICULÁRIA VULGÁRIS (*Common Bladderwort*).

which are then filled with air; the flowers, which grow in clusters of 6—8 together, are large, and bright yellow, and are raised several inches out of the water. After flowering the bladders become filled with water, and the whole plant sinks to the bottom.—Fl. June, July. Perennial.

* *U. minor* (Lesser Bladderwort) is a rare species, with small yellow *flowers*, and a short blunt *spur;* it is most frequent in Scotland: *U. intermedia* (Intermediate Bladderwort) is also a rare species, distinguished from the common one by having the *upper lip* of the corolla much longer than the *lower*, and by bearing its air-bladders on branched stalks distinct from the leaves.

ORD. LXV.—PRIMULACEÆ.—PRIMROSE TRIBE.

Calyx 5-cleft, rarely 4-cleft (in *Trientális* 7-cleft), regular, not falling off; *corolla* of as many lobes as the calyx (in *Glaux* wanting); *stamens* equalling in number the lobes of the corolla, and opposite to them; *ovary* 1-celled; *style* 1; *stigma* capitate; *capsule* 1-celled, opening with valves; *seeds* numerous, attached to a central column.—Herbaceous plants, mostly of humble growth, inhabiting, principally, the colder regions of the northern hemisphere, and in lower latitudes ascending to the confines of perpetual snow. In this order are found several of our most favourite British plants. The Primrose, as its name indicates (*prima rosa*, the first rose), is the most welcome harbinger of spring: the Cowslip is scarcely less prized for its pastoral associations than for its elegance and fragrance; Pimpernel, or "Poor man's weather-glass," is as trusty a herald of summer weather as the Primrose of spring. Nor is it only as *Flowers of the Field* that the plants of this tribe are valued. The Polyanthus and Auricula equally grace the cottager's garden, and the collections of the florist; and several species of Cýclamen are commonly found in conservatories. Some species possess active medicinal properties; the flowers of the Cowslip are made into a pleasant soporific wine; and the leaves of the Aurícula (*Prímula Aurícula*) are used in the Alps as a remedy for coughs. The flowers of Pimpernel and roots of Cýclamen are acrid.

1. PRÍMULA (Primrose).—*Calyx* tubular, 5-cleft; *corolla* salver or funnel-shaped, with a long cylindrical tube; *stamens* 5, enclosed within the tube of the corolla; *capsule* 5-valved with ten teeth. (Name from the Latin *primus*, first, from the early appearance of the flowers.)

2. HOTTONIA (Water Violet).—*Calyx* 5-cleft almost to the base; *corolla* salver-shaped, with a short tube; *stamens* 5; *capsule* opening with 5 teeth. (Named after Professor Hotton, of Leyden.)

3. CÝCLAMEN (Sow-bread).—*Calyx* bell-shaped, cleft half way down into 5 segments; *corolla* wheel-shaped, the lobes reflexed; *stamens* 5; *capsule* opening with 5 teeth. (Name from the Greek *cyclos*, a circle, either from the reflexed lobes of the corolla, or from the spiral form of the fruit-stalks.)

4. ANAGALLIS (Pimpernel).—*Calyx* 5-cleft to the base; *corolla* wheel-shaped; *stamens* 5, hairy; *capsule* splitting all round. (Name in Greek denoting that the plant excites pleasure.)

5. LYSIMÁCHIA (Loosestrife).—*Calyx* 5-cleft to the base; *corolla* wheel-shaped; *stamens* 5, not hairy; *capsule* opening by valves. (Name in Greek having the same meaning as the English name.)

6. CENTÚNCULUS (Chaffweed).—*Calyx* 5-cleft to the base; *corolla* with an inflated tube; *stamens* 4; *capsule* splitting all round. (Name of doubtful etymology.)

7. TRIENTÁLIS (Chickweed Winter-green).—*Calyx* 7-cleft to the base; *corolla* wheel-shaped; *stamens* 7; *capsule* opening with valves. (Name of doubtful etymology.)

8. GLAUX (Sea-milkwort).—*Calyx* 0; *corolla* bell-shaped, 5-lobed; *stamens* 5; *capsule* 5-valved, with 5—10 seeds. (Name in Greek denoting the sea-green colour of the foliage.)

9. Sámolus (Brookweed).—*Calyx* 5-cleft, adhering to the lower half of the capsule, not falling off; *corolla* salver-shaped, with 5 scales at the mouth of the tube; *stamens* 5; *capsule* opening with 5 reflexed teeth.

PRIMULA VULGÁRIS (*Primrose*).

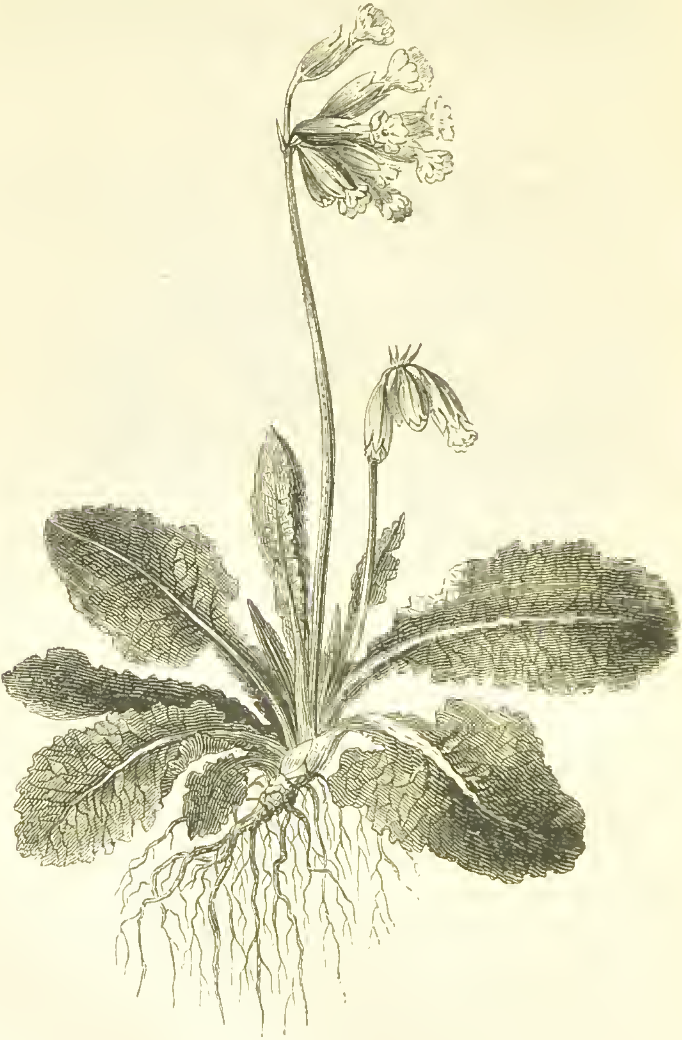
("Named, some say, from the Island of Samos, where Valerandus, a botanist of the 16th century, gathered our *Samolus Valerandi.*"—*Sir W. J. Hooker.*)

1. Prímula (*Primrose*).

1. *P. vulgáris* (Primrose).—*Flowers* each on a separate stalk; *leaves* oblong, egg-shaped.—Banks and woods, abundant. Among the most welcome of spring flowers, and too well known to need any description. The colour of the flower is so peculiar as to have a name of its own; artists maintain that primrose-colour is a delicate green; white, purple, and lilac varieties are not uncommon.—Fl. March—May. Perennial.

2. *P. elatior* (Oxlip).—*Flowers* in a stalked umbel, salver-shaped; *calyx* tubular; *leaves* egg-shaped, contracted below the middle.—Woods and pastures, not common. Distinguished from the *Primrose* by its umbellate yellow flowers, and by its leaves, which become suddenly broader above the middle, and from the Cowslip by its tubular, not bell-shaped calyx, and flat, not concave corolla.—Fl. April, May. Perennial.

3. *P. veris* (Cowslip, Paigle).—*Flowers* in a stalked umbel, drooping, funnel-shaped; *calyx* bell-shaped; *leaves* egg-shaped, contracted below the middle. — Pastures, common. Among the many pleasing purposes to which these favourite flowers are applied by children, none is prettier than that of making *Cowslip Balls.* The method, which may not be known to all my readers, is as follows: —The umbels are picked off as close as possible to the top of the main stalk, and from fifty to sixty are made to hang across a string stretched between the backs of two chairs. The flowers are then carefully pressed together, and the string is tied tightly so as to collect them into a ball. Care should be taken to choose such heads or umbels only as have all the flowers open, or the surface of the ball will be uneven.—Fl. April, May. Perennial.



PRIMULA VERIS (*Cowslip. Paigle*).

* *P. farinósa* (Bird's-eye Primrose) is found in mountainous pastures in the North of England, and South of Scotland ; its leaves are thickly covered with a powdery meal, and the flowers are purple with a yellow eye : *P. scótica* (Scottish Primrose) is a rare species, growing in the Orkneys, and in a few places in the North of Scotland ; it resembles the last, but is smaller. All the varieties of Primrose, Cowslip, and Auricula, may be easily propagated by dividing the roots in autumn. New varieties are raised from seed, which should be sown as soon as ripe in leaf-mould, and pricked out into beds when large enough.

HOTTÓNIA (*Water Violet*).

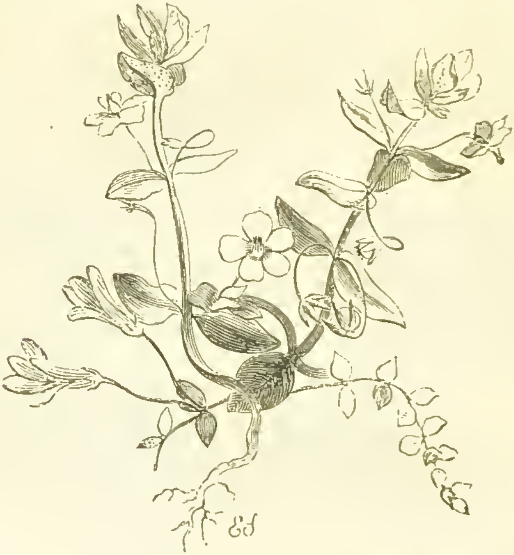
2. HOTTÓNIA (*Water Violet*).

1. *H. palustris* (Water Violet).—The only British species.—Ponds and ditches, common. An aquatic plant, with finely divided, submersed *leaves ; flowers*

large, handsome, pink and yellow, arranged in *whorls* around a leafless stalk, which rises several inches out of the water.

3. CYCLAMEN (*Sow-bread*).

1. *C. hederæfolium* (Ivy-leaved Sow-bread).—The only species found in Britain, and probably not a native.—Remarkable for its globular, brown *root*, and nodding flesh-coloured *flowers*, the lobes of which are bent back. As the *fruit* ripens, the flower stalk curls spirally, and buries it in the earth. The root is intensely acrid.—Fl. April. Perennial.



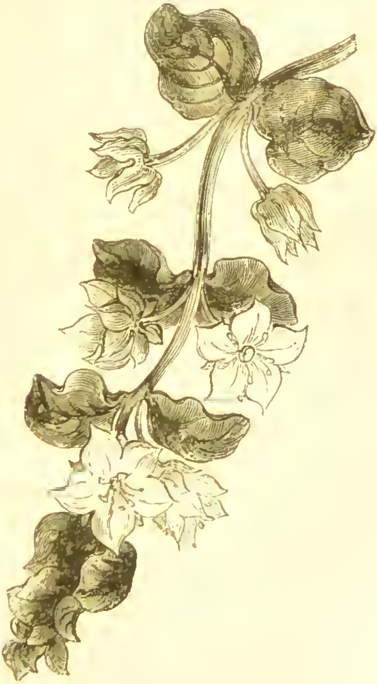
ANAGALLIS ARVENSIS (*Scarlet Pimpernel*) and A. TENELLA (*Bog Pimpernel*)

4. ANAGALLIS (*Pimpernel*).

1. *A. arvensis* (Scarlet Pimpernel).—*Leaves* egg-shaped, dotted beneath, sessile ; *petals* crenate.—Cultivated ground, abundant. A pretty little plant, with bright scarlet flowers, which expand only in fine weather, and have consequently gained for the plant the name of

Poor man's weather-glass. The colour of the flowers occasionally varies to flesh-coloured, or white with a red eye. A bright blue variety, which some botanists consider a distinct species, is more unfrequent.—Fl. June, July. Annual.

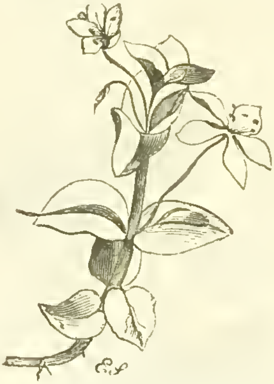
2. *A. tenella* (Bog Pimpernel).—*Stem* creeping; *leaves* roundish, stalked, shorter than the flower-stalks.—Boggy ground and sides of rivulets, common. A beautiful little plant with slender stems 4—6 inches long, small leaves which are arranged in opposite pairs, and erect rose-coloured flowers, larger than those of the *Scarlet Pimpernel,* and more frequently having the lobes of the corolla erect than expanded.



LYSIMÁCHIA NUMMULARIA (*Money-wort*).

5. Lysimáchia (*Loosestrife*).

1. *L. Nummularia* (Money-wort, Herb-twopence).—*Stem* creeping; *leaves* roundish, slightly stalked; *flowers* solitary, axillary.—Banks of rivers and damp woods, common. A very pretty plant, well marked by its opposite, shining leaves, and large, yellow flowers. The stems often grow a foot or more in length, and hang from the banks of rivers in a very graceful way. This plant is much used to ornament artificial rockeries.—Fl. June, July. Perennial.



LYSIMACHIA NÉMORUM (*Wood Loosestrife, Yellow Pimpernel*).

2. *L. némorum* (Wood Loosestrife, Yellow Pimpernel). —*Stem* spreading; *leaves* egg-shaped, acute; *flowers* solitary, axillary.—Woods, common. Approaching the Scarlet Pimpernel in habit, but somewhat larger; the flowers are bright yellow, and very pretty.—Fl. June, July. Perennial.

3. *L. vulgáris* (Great Yellow Loosestrife).—*Stem* erect, branched; *leaves* tapering to a point, opposite, or 3—4 in a whorl; *flowers* in terminal panicles.—Banks of rivers, common. Very different in habit from either of the preceding, growing quite erect, 2—3 feet high, with terminal panicles of rather large, yellow flowers.—Fl. July. Perennial.

* *L. thyrsiflóra* (Tufted Loosestrife) resembles *L. vulgáris* in habit, but bears its flowers, which are small and yellow, in numerous, dense clusters; it grows in marshes in Scotland and the North of England, but is rare.

CENTÚNCULUS MÍNIMUS (*Chaffweed*).

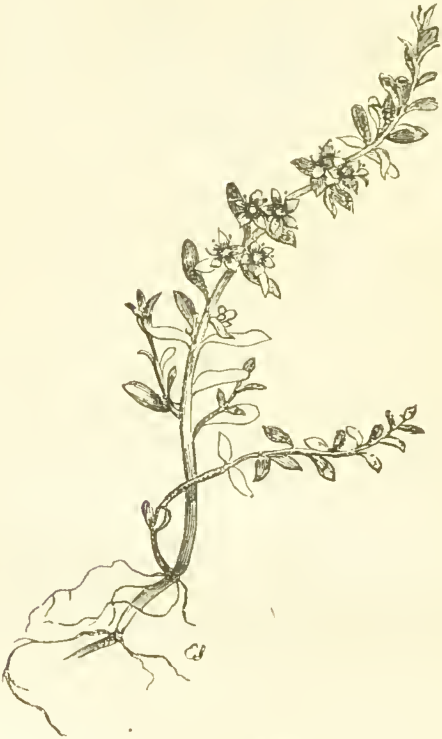
6. CENTÚNCULUS (*Chaffweed*).

1. *C. mínimus* (Chaffweed).—The only British species.—One of the smallest among British plants, rarely exceeding an inch in height, and often much less. It is nearly allied to the *Pimpernel*, and at the first glance might be mistaken for a stunted specimen of the common species. The *leaves* are egg-shaped, acute; the *flowers* sessile, axillary. It is sometimes branched, but very frequently consists of a single stem, 6 or 8 leaves, and as many inconspicuous flowers.—It grows in damp, gravelly places, especially where water has stood during winter.—Fl. June—August. Annual.

7. TRIENTÁLIS (*Chickweed Winter-green*).

1. *T. Europǽa* (European Chickweed Winter-green).—The only British species, and the only British plant belonging to the Linnæan Class, Heptandria.—Abundant in many parts of the Highlands of Scotland, and occasionally found in the North of England. A pretty

plant, with an unbranched *stem* 4—6 inches high, bearing a few large *leaves* near its summit, and one or more delicate white *flowers*, each on a slender stalk. The number of *stamens* varies from 7—9.—Fl. June. Perennial.

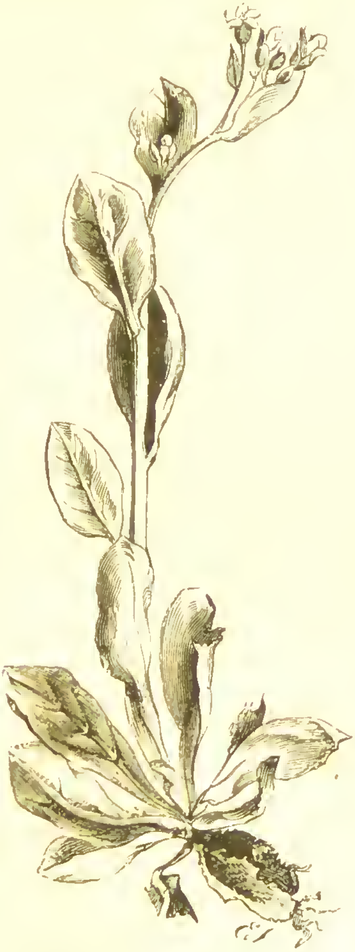


GLAUX MARÍTIMA (*Sea Milk-wort*).

8. Glaux (*Sea-Milkwort*).

1. *G. marítima* (Sea-Milkwort).—The only species.—Sea shore and salt marshes, common. A fleshy, marine plant 3—6 inches high, growing in thick patches, with

numerous egg-shaped, glaucous *leaves*, and axillary pink *flowers*, which are destitute of *calyx*. In habit it resembles *Honckenya peploídes.*—Fl. June—August. Perennial.



SAMOLUS VALERANDI (*Brookweed*).

9. Sámolus (*Brookweed*).

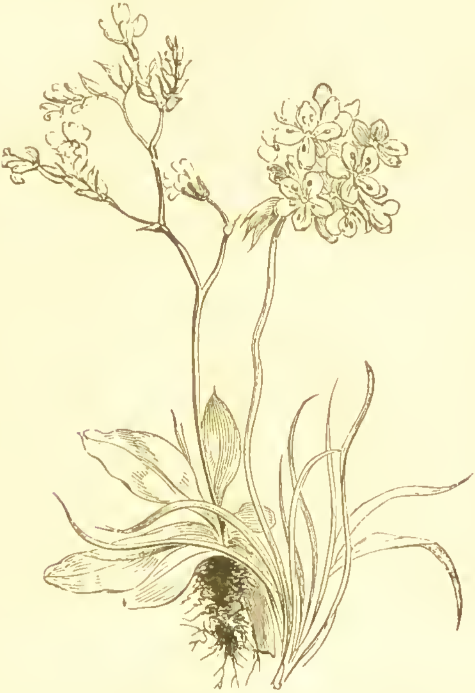
1. *S. Valerandi* (Brookweed).—The only British species.—Watery places, common, and, like many other aquatic plants, widely diffused, being found in Africa, America, and New South Wales. A smooth, pale green, herbaceous plant, with blunt, fleshy *leaves*, and one or more terminal clusters of very small white *flowers*, which, in their early stage, are crowded, but finally become distant, resembling in this respect the habit of the Cruciform Tribe.—Fl. July—September. Annual.

Ord. LXVI.—PLUMBAGINACEÆ.—Thrift Tribe.

Calyx tubular, plaited, chaffy, not falling off, often coloured; *corolla* 5-cleft nearly to the base; *stamens* 5 opposite the petals, *ovary* of 5 carpels, 1-celled; *styles* 5; fruit 1-seeded.—Herbaceous or somewhat shrubby plants, with undivided, fleshy leaves, and flowers of a thin texture, approaching that usually called *Everlasting*, collected into heads or growing in panicles. They inhabit salt marshes and the sea shore of most temperate regions, and some are also found in mountainous districts. Their properties are various,—some are tonic, some intensely acrid, and many contain iodine. The root of *Státicé Caroliniana* is one of the most powerful astringents known; several species of *Plumbágo* are so acrid that the fresh root is used to raise blisters. Thrift (*Arméria*) and several kinds of Sea-Lavender (*Státicé*) grow on the sea shores of Britain, and are very pretty plants. Other species are cultivated in gardens and conservatories, to which they are highly ornamental. It has been remarked that the plants of this order, like many other marine plants, when growing at a distance from the sea, lose the peculiar salts which they contain in their natural localities. Thrift, for example, as a marine plant contains iodine and soda, but as a mountain or garden plant, exchanges these two salts for potash.

1. Arméria (Thrift). *Flowers* in heads; *styles* hairy. (Name from the French *armoiries*.)

2. Státicé (Sea Lavender). *Flowers* panicled; *styles* smooth. (Name from the Greek *statizo*, to stop, from its supposed medicinal virtues.)



STÁTICÉ SPATHULÁTA (*Spathulate Sea-Lavender*) and ARMÉRIA MARÍTIMA (*Thrift*).

1. Armeria (*Thrift*).

1. *A. marítima* (Thrift).—*Leaves* linear, fleshy; *flower-stalks* springing directly from the roots, leafless, and bearing each a roundish head of flowers.—Sea shores and the tops of mountains, common. *Leaves* forming dense tufts or balls; *flowers* rose-coloured, in roundish heads, which are raised on downy stalks 3—6 inches from the ground;

the summit of the flower-stalk is cased in a brown membranous sheath, and the flowers are intermixed with chaffy bracts, or scales ; the fruit is almost winged by the dry, chaffy calyx.—Fl. July, August. Perennial.

2. Státicé (*Sea Lavender*).

1. *S. Limónium* (Sea Lavender).—*Leaves* oblong 1-ribbed, tipped with a point ; *flower-stalk* from the root, leafless, branched near the summit into many spreading tufts.—Muddy sea coast, not unfrequent. Very different from the last, having broad leaves and angular flower-stalks, which are branched at the summit into several spike-like clusters of thin, scentless flowers.—Fl. July, August. Perennial.

* *S. spathuláta* or *binervósa* (Spathulate Sea-Lavender) is not uncommon on the rocky sea coast: it is distinguished by its *leaves* being oblong near the base and wider above (*spathulate*), and by its *flower-stalks* being branched below the middle into several erect tufts of blue flowers : *S. reticuláta* or *Caspia* (Matted Sea-Lavender) occurs only in the salt marshes of Norfolk ; the flower-stalks are divided almost from the base into numerous zigzag branches, of which the lower are barren.

Ord. LXVII.—PLANTAGINACEÆ.—Plantain Tribe.

Calyx 4-parted ; *corolla* 4-parted, chaffy, not falling off ; *stamens* 4, alternate with the segments of the corolla. and having very long, thread-like filaments, and lightly-attached anthers : *ovary* 2- rarely 4-celled : *style* 1 : *stigma* hairy ; *capsule* splitting transversely ; *seeds* 1. 2, or many in each cell.—Herbaceous plants of humble growth, with many ribbed or fleshy leaves spreading horizontally from the root. The flowers, which are made conspicuous by their long stamens, grow in spikes. Several species are common in great Britain as wayside, meadow, and marine plants, and many are found in almost all parts of the world. The leaves are slightly bitter and astringent; the seeds abound in a tasteless mucilage, which is used in medicine as a substitute for Linseed, and is said to be employed in France to stiffen muslin.

1. PLANTÁGO (Plantain).—*Calyx* 4-cleft, the segments bent back; *corolla* tubular, with 4 spreading lobes; *stamens* very long; *capsule* splitting all round, 2—4-celled. (Name of doubtful origin.)

2. LITTORELLA (Shore-weed).—Stamens and pistils in different flowers; *barren flower* stalked; *stamens* very long; *fertile flower* sessile; *bracts* 3, *corolla* tubular, contracted at both ends; *style* very long; *capsule* 1-seeded. (Name in Latin having the same meaning as the English name.)

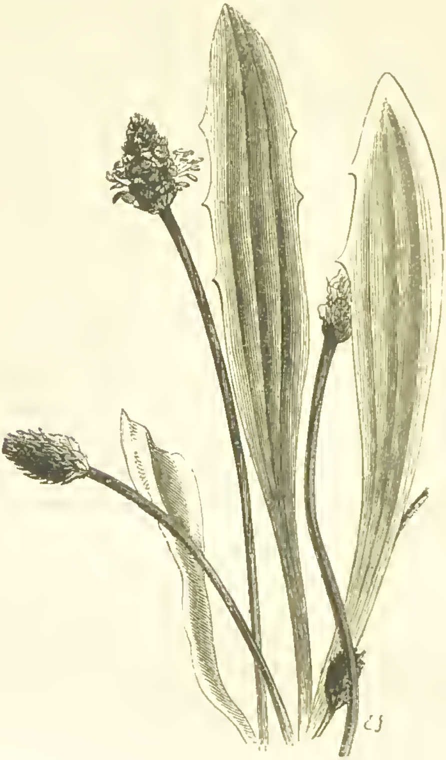
1. PLANTÁGO (*Plantain*).

1. *P. major* (Greater Plantain).—*Leaves* broadly egg-shaped on long channelled stalks; *flowers* in a long spike, the stem of which is cylindrical; *cells* of the *capsule* many-seeded.—Borders of fields and waysides, abundant. Well known for its spikes of green flowers, the seeds of which are a favourite food of Canary birds.—Fl. June July. Perennial.

2. *P. media* (Hoary Plantain).—*Leaves* broadly elliptical on short flat stalks; *flowers* in a close cylindrical spike, the stalk of which is also cylindrical; *cells* of the *capsule* 1-seeded.—Meadows, common. The leaves spread horizontally from the crown of the root, and lie so close to the ground as to destroy all vegetation beneath and to leave the impression of their ribs on the ground; the spike is shorter than in *P. major*, but grows on a longer stalk, and the flowers, which are fragrant, are rendered conspicuous by their light purple anthers.—Fl. June, July. Perennial.

3. *P. lanceoláta* (Ribwort Plantain).—*Leaves* narrow, tapering; *flowers* in a short spike, the stalk of which is angular; *cells* of the *capsule* 1-seeded.—Meadows, abundant. Under the name of *Cocks and Hens* this plant

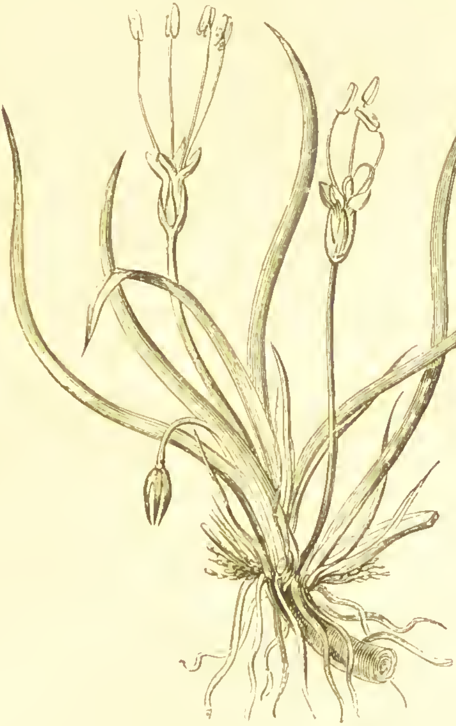
is well known to children, who amuse themselves by striking the heads one against another until the stalk breaks. The flowers are dark brown.—Fl. June, July. Perennial.



PLANTÁGO LANCEOLÁTA (*Ribwort Plantain*).

4. *P. marítima* (Sea-side Plantain).—*Leaves* linear, grooved, fleshy, woolly at the base.—Sea shores and tops of mountains, common. Easily distinguished from the rest of the genus by its long, fleshy leaves.—Fl. June—September. Perennial.

5. *P. Corónopus* (Buck's-horn Plantain). — *Leaves* pinnatifid; *capsule* imperfectly 4-celled, 4-seeded.—Waste ground, especially near the sea, common. The only British species which has divided leaves; these are more or less downy, and usually prostrate.—Fl. June, July. Annual.



LITTORELLA LACUSTRIS (*Shore weed*).

2. LITTORELLA (*Shore-weed*).

1. *L. lacustris* (Shore-weed).—The only species.—Marshes and banks of lakes. Not unlike *Plantago marítima* in habit, but at once distinguished by its soli-

tary *barren flowers*, raised each on a stalk 2—4 inches high; the *fertile flowers* are sessile among the leaves.—Fl. June—September. Perennial.

SUB-CLASS IV.

MONOCHLAMYDEÆ.

Flowers having a calyx or corolla, or neither, never both. In this Sub-class it is often doubtful whether the leaves which enclose the stamens and pistils of a flower should be called a *calyx* or *corolla*: the term *perianth* (from the Greek *peri*, around, and *anthos*, a flower) is therefore used to denote this organ, and must be taken to mean all the leaves, whether resembling *sepals* or *petals*, which enclose the other parts of fructification. Used in this sense, and applied to the preceding Sub-classes, the calyx and corolla would be correctly called a *double perianth.*

ORDER LXVIII.—CHENOPODIACEÆ.—GOOSE-FOOT TRIBE.

Perianth 2—5-lobed, not falling off; *stamens* 5, rarely 1 or 2, from the base of the perianth and opposite its lobes: *ovary* 1, superior or adhering to the tube of the perianth: *style* 2 or 4 cleft, rarely simple; *stigma* undivided; *fruit* 1-seeded, enclosed in the perianth, which often becomes enlarged or fleshy.—Herbaceous or somewhat shrubby plants, with leaves which are more or less inclined to be fleshy; the flowers are small and inconspicuous, the perianth decidedly partaking of the characters of a *calyx*, which sometimes, as in *Atriplex*, has a tendency to become enlarged when in fruit. Some plants have flowers bearing pistils only, others stamens only, and others again both stamens and pistils. They are common weeds in many temperate climates, and are most abundant in salt marshes and on the sea shore. Many of the plants of this tribe are used as esculent vegetables, as Spinach, Beet, and Orache. Beet is cultivated extensively in France for making sugar, and a variety of it affords valuable food for cattle under the name of Mangold Wurzel. In Peru the leaves of *Chenopódium Quinoa*, a plant growing at a great elevation, are a common article of food. Many of those kinds which grow in salt marshes and on the sea shore afford an immense quantity of soda. According to some naturalists *Salvadóra Pérsica*, belonging to this order, is the Mustard Tree of Scripture. It bears a juicy fruit, having the flavour of cress, and its seeds are very small. Some of the species have an offensive odour; but a variety of *Chenopódium Botrys*, found in Zermatt, Switzerland, is remarkable for the aromatic fragrance of its foliage.

1. Chenopódium (Goose-foot). — *Perianth* deeply 5-cleft, remaining unaltered, and finally closing over the single seed; *stamens* 5; *stigmas* 2; *leaves flat*. (Name in Greek meaning the same as the English name.)

2. Suǽda (Sea Blite).—*Perianth* deeply 5-cleft, often fleshy; *stamens* 5; *stigmas* 2—3; *leaves* semicylindrical. (Name from *suæd*, soda, in which the plants abound.)

3. Átriplex (Orache).—*Stamens* and *pistils* for the most part in separate flowers, sometimes united; *barren flower*, *perianth* 2—5 cleft; *stamens* 5; *fertile flower*, *perianth* of 2 valves; *stigmas* 2; *fruit* 1-seeded, covered by the enlarged perianth; *leaves* flat. (Name from the Greek *a*, not, and *trephein*, to nourish.)

4. Beta (Beet).—*Perianth* deeply 5-cleft; *stamens* 5; *stigmas* 2; *fruit* 1-seeded, adhering to the tube of the fleshy perianth; *leaves* flat. (Name, the Latin name of the plant.)

5. Sálsola (Saltwort).—*Perianth* deeply 5-cleft; *stamens* 5; *stigmas* 2; *fruit* 1-seeded, crowned by the shrivelled lobes of the perianth; *leaves* cylindrical. (Name from the Latin *sal*, salt, from the alkaline salt in which it abounds.)

6. SALICORNIA (Glass-wort).—*Perianth* top-shaped, fleshy, undivided; *stamens* 1—2; *style* very short; *stigma* 2-cleft; *fruit* enclosed in the dry perianth: *stem* jointed; *leaves* none. (Name from the Latin *sal*, salt, and *cornu*, a horn, from the alkaline salt in which it abounds, and the horn-shaped branches.)

1. CHENOPODIUM (*Goose-foot*).

* *Leaves undivided.*

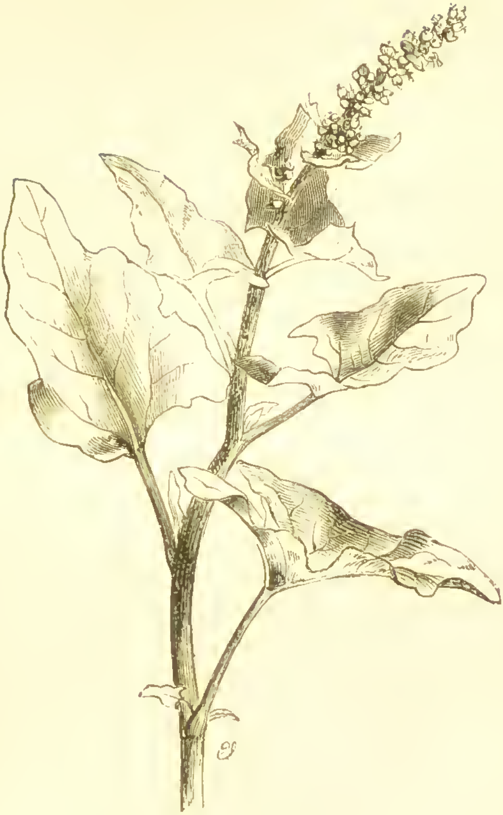
1. *C. ólidum* (Stinking Goose-foot).—*Stem* spreading; *leaves* egg-shaped, with a triangular base, fleshy, mealy: *flowers* in dense clustered spikes.—Waste places, especially near the sea. Distinguished by its fishy smell, which is disgusting in the extreme.—Fl. August. Annual.

2. *C. polyspermum* (Many-seeded Goose-grass).—*Stem* spreading; *leaves* egg-shaped, sessile; *flowers* in branched, somewhat leafy, slender spikes; *seeds* flattened horizontally, shining, minutely dotted.—Waste ground, not common. Varying in size, from 4 inches to a foot in height; the stems and leaves usually have a red tinge, and the plant, when in flower, has a not inelegant appearance from the number of shining, brown seeds, which are not concealed by the perianth.

* * *Leaves toothed, angled, or lobed.*

3. *C. Bonus-Henrícus* (Good King Henry).—*Leaves* triangular, arrow-shaped; *flowers* in compound, leafless spikes.—Waste places near villages, common. A dark-green, succulent plant, about a foot high, with large, thickish leaves, which are used as *Spinach*.—Fl. August. Perennial.

4. *C. album* (White Goose-foot).—*Leaves* egg-shaped, with a triangular base, bluntly toothed, upper ones narrow, entire; *flowers* in dense, clustering spikes.—Waste places and cultivated ground, common. Whole plant succulent; leaves more or less fleshy, and covered with



CHENOPODIUM BONUS-HENRICUS (*Good King Henry*).

a whitish, mealy powder. This is, perhaps, the commonest species: it grows 1—3 feet high.—Fl. July—September. Annual.

* There are several other British species of this uninteresting family, some of which have nothing but their rarity to recommend them, and others are remarkable only for the tendency of their leaves to assume a tri-

angular outline, the margin being variously lobed and toothed. The characters of most are difficult of discrimination, so that botanists are agreed neither as to the number of species nor names.

2. SUÆDA (*Sea Blite*).

1. *S. marítima* (Annual Sea Blite).—*Styles* 2 ; *stem* herbaceous.—Muddy sea-shore, common. A low, straggling plant, with short, fleshy, semicylindrical leaves ; and small, inconspicuous, green flowers. — Fl. July, August. Annual.

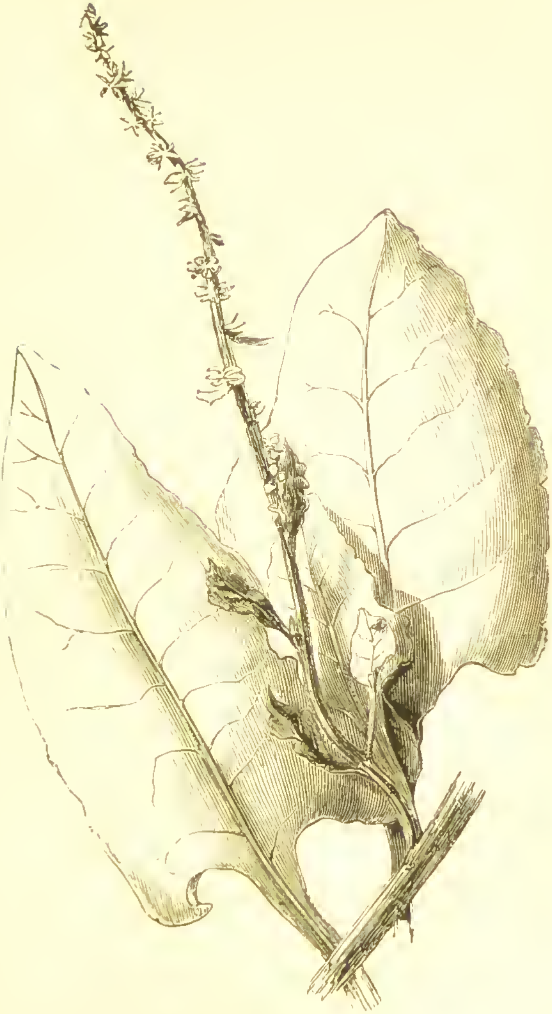
2. *S. fruticósa* (Shrubby SeaBlite).—*Styles* 3 ; *stem* shrubby.—A much rarer plant than the last, growing 2—3 feet high, with a shrubby *stem*, and having 3 *styles* in each flower.

3. ATRIPLEX (*Orache*).

1. *A. pátula* (Spreading fruited Orache). — *Stem* spreading, often with the central branch erect ; *leaves* triangular, with 2 spreading lobes at the lower angles. toothed, the *upper leaves* narrow, entire ; *flowers* in tufted spikes ; *perianth* of the fruit warty at the back.—Cultivated and waste ground, and on the sea shore ; abundant. A common weed, with straggling, furrowed stems, often tinged with red ; distinguished from the Goose-foot family by the solitary seed being shut in between 2 triangular, leaf-like valves. The main stem is usually erect, the rest are prostrate, appearing as if they had been bent down by force.—Fl. July, August. Annual.

2. *A. laciniáta* (Frosted Sea Orache).—*Stem* spreading ; *leaves* with three angles, wavy at the edge, and toothed, mealy beneath.—Sea shore, frequent. Distinguished from the preceding by its mealy leaves, and the whitish hue of the whole plant.—Fl. July, August. Annual.

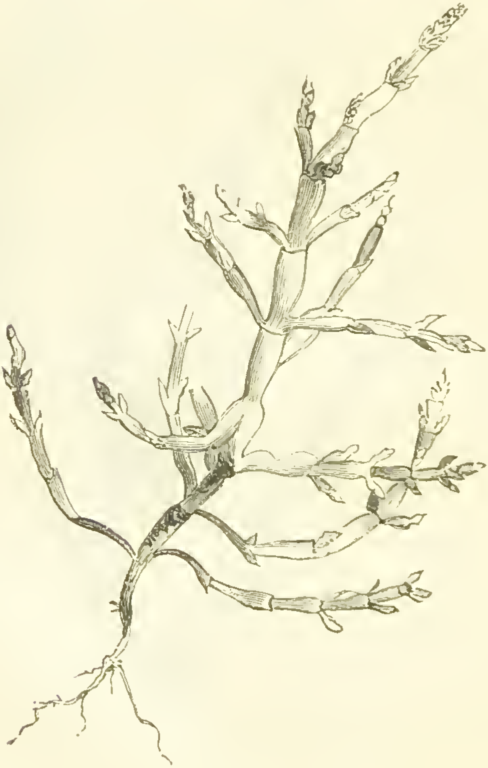
* Several other species are described by botanists, but the remark annexed to the preceding family applies equally well to this.



BETA MARÍTIMA (*Sea-Beet*).

4. BETA (*Beet*).

1. *B. marítima* (Sea-Beet).—The only British species. —Sea shore, common. A tall succulent plant, about 2 feet high, with large, fleshy, glossy *leaves*, angular *stems*, and numerous leafy *spikes* of green flowers, which are arranged 1 or 2 together, with a small leaf at the base of each. The root leaves when boiled are quite as good as *Spinach.*—Fl. August. Perennial.



SALICORNIA HERBÁCEA (*Jointed Glass-wort*).

5. SÁLSOLA (*Saltwort*).

1. *S. Kali* (Prickly Saltwort).—The only British species.—Sandy sea shore, common. A small plant with prostrate, branched *stems*, and succulent awl-shaped *leaves*, each of which terminates in a sharp prickle; the *flowers* are solitary, and have 3 *bracts* at the base of each. The whole plant abounds in alkaline salt, whence its name.—Fl. July. Annual.

6. SALICORNIA (*Glasswort*).

1. *S. herbácea* (Jointed Glasswort).—*Stem* herbaceous, jointed; *leaves* 0.—Salt marshes, abundant. A singular plant 4—8 inches high, consisting of a number of fleshy joints, each of which is fitted into the one below, entirely destitute of leaves, and bearing between every two joints of the terminal branches 3 inconspicuous green flowers. —Fl. August, September. Annual.

* *S. radícans* (Rooting Glasswort) is a less common species, having prostrate, rooting *stems*. Both species abound in soda, which is used in the manufacture of glass; hence the name *Glasswort*.

ORD. LXIX.—SCLERANTHACEÆ.—THE KNAWEL TRIBE.

Perianth tubular, 4 or 5 cleft; *stamens* 5—10, inserted into the mouth of the tube; *ovary* 1, superior, 1-celled; *styles* 2 or 1 notched at the summit; *fruit* enclosed within the hardened tube of the perianth.—Only one British genus belongs to this order, containing but two species, which are small inconspicuous weeds, with wiry much branched stems, scanty foliage, and small greenish flowers, remarkable only for the chaffy edge of the perianth.

1. SCLERANTHUS (Knawel).—*Calyx* 5-cleft, contracted at the mouth of the tube; *petals* 0; *stamens* 10, rarely

5; *styles* 2; *fruit* 1-seeded, covered by the hardened calyx. (Name from the Greek *scléros*, hard, and *anthos*, a flower, from the hardness of the calyx.)

SCLERANTHUS ANNUA (*Annual Knawel*).

1. Scleranthus (*Knawel*).

1. *S. annua* (Annual Knawel).—*Calyx*, when in fruit, spreading, acute, with a narrow whitish margin; root annual.—Corn-fields, especially on a gravelly soil, common. A small plant, 2—4 inches high, with numerous tangled stems, awl-shaped leaves, and green flowers, which grow either in the forks of the stems, or in terminal tufts.—Fl. July—November. Annual.

* *S. perennis* (Perennial Knawel) has prostrate *stems*, blunt *calyx-leaves*, with a broad margin, and perennial *roots*. It grows in dry sandy fields, in Norfolk and Suffolk.

ORD. LXX.—POLYGONACEÆ.—THE PERSICARIA TRIBE.

Flowers often bearing *stamens* only, or *pistils* only. *Perianth* deeply 3—6 parted, often in two rows; *stamens* 5—8 from the base of the perianth; *ovary* 1, not attached to the perianth; *styles* 2 or 3; *fruit* a flattened or triangular nut.—Herbaceous plants, distinguished by the above characters and by bearing alternate leaves furnished at the base with membranous stipules, which encircle the stalk. The perianth is often coloured; and as the flowers, though not large, are numerous, and grow in spikes or panicles, many of them are handsome plants. Others, as the Dock, are unsightly weeds; they are found in all parts of the world, from the Tropics to the Poles. The properties residing in the leaves and roots are very different, the former being acid and astringent, and sometimes of an agreeable flavour; the latter nauseous and purgative. The powdered root of several species of *Rhéum* affords the valuable medicine Rhubarb, and the leaf-stalks of the same plants are much used for making tarts; the sharp taste is attributed to the presence of oxalic, nitric, and malic acids. Two native kinds of Sorrel, and several of Dock, belong to the genus *Rumex*. Sorrel (*R. Acetósa*) is sometimes used in the same way as Rhubarb-stalks; but the species mostly employed in cookery is *R. scutáta*. To the genus *Polýgonum* belong *P. Fagopýrum*, Buck-wheat, or *Beech-wheat*, so called from the resemblance in shape between its seeds and the mast of the Beech-tree. In some countries the flour derived from its seeds is made into bread, but in England it is not much cultivated except as food for pheasants, which are very partial to it. *P. tinctórum* is extensively cultivated in France and Flanders for the sake of the blue dye afforded by its herbage; and several other species are used as medicine. *Tríplaris Americána* attains the dimensions of a tree, and is remarkable for being infested by ants, which excavate dwellings for themselves in its trunk and branches. (See "Forest Trees of Britain," vol. ii. p. 65.)

1. Polýgonum (Persicaria).—*Perianth* deeply 5-cleft, not falling off; *stamens* 5—8; *styles* 2 or 3; *fruit* a triangular or flattened nut. (Name in Greek signifying *having many knees*, or joints, from the numerous joints of the stem.)

2. Rumex (Dock).—*Perianth* deeply 6-cleft, in two rows, the interior segments large; *stamens* 6; *styles* 3; *fruit* a triangular nut, covered by the enlarged inner perianth. (Name, the Latin name of the plant.)

3. Oxýria (Mountain-Sorrel).—*Perianth* deeply 4-cleft, in two rows, the interior segments large: *stamens* 6; *styles* 2; *fruit* a flattened nut with a membranous wing. (Name from the Greek *oxys*, sharp, from the acid flavour of the stem and leaves.)

1. Polýgonum (*Persicaria*).

* *Styles* 3; *fruit triangular.*

1. *P. Bistorta* (Bistort, Snakeweed).—*Stem* simple, erect, bearing a single dense spike; *leaves* egg-shaped, the lower ones on winged stalks.—Moist meadows, not common. A rather handsome plant, with a large twisted root, and several stems 1—1½ foot high, each of which bears a cylindrical spike of flesh-coloured flowers. The English names *Bistort* (twice twisted) and *Snake-weed* were given in allusion to the form of the root.—Fl. June. Perennial.

2. *P. viviparum* (Viviparous Bistort).—*Stem* simple, erect, bearing a single loose spike which has in the lower part small bulbs in place of flowers; *leaves* very narrow, their margins rolled back.—Mountain pastures, especially in the Highlands of Scotland. A slender plant, 6—8 inches high, remarkable for its tendency to propagate itself by small, red bulbs, which supply the place of

flowers in the lower part of the spike; the flowers are light flesh-coloured.—Fl. June, July. Perennial.

3. *P. aviculáré* (Common Knot-grass).—*Stem* branched, prostrate; *leaves* narrow, elliptical; *flowers* axillary.—Waste ground and road sides, abundant. A common weed, with leaves which are furnished with chaffy stipules, and with minute flesh-coloured or greenish-white flowers. It varies greatly in size, and in rich soil often has a tendency to grow nearly erect.—Fl. all the summer. Annual.

* Closely allied to *P. aviculáré* are *P. Roberti*, a sea-side plant, with stouter stems, glaucous foliage, and large shining fruit; and *P. marítimum*, also a sea-side plant, but very rare, distinguished from the preceding by its large, nerved stipules, and shrubby stem.

4. *P. Fagopýrum* (Buck-wheat).—*Stem* erect; *leaves* heart-arrow-shaped, acute; *flowers* in spreading panicles.—A doubtful native, found only near cultivated land, where it is grown principally as food for pheasants. The stems are branched and about a foot high, the flowers light flesh-coloured.—Fl. July, August. Annual.

5 *P. Convólvulus* (Climbing Persicaria).—*Stem* twining; *leaves* heart-arrow-shaped; *segments* of the *perianth* bluntly keeled; *fruit* roughish.—Cultivated ground, abundant. A mischievous weed with the habit of the *Field Convólvulus*, twining round the stems of corn and other plants, and bearing them down by its weight. The flowers are greenish-white, and grow in axillary spikes about 4 together.—Fl. July, August. Annual.

* *P. dumetórum* (Copse Buck-wheat) is distinguished from the last by its more luxuriant growth, its winged perianth, and shining fruit. It grows in bushy places in the South of England.

** *Styles mostly 2; fruit flattened.*

6. *P. amphíbium* (Amphibious Persicaria).—*Stem* erect, or supported in the water by the floating leaves; *flowers* in oblong spikes; *stamens* 5; *leaves* oblong, heart-shaped at the base.—Ditches and banks of pools,

POLÝGONUM CONVÓLVULUS (*Climbing Persicaria*).

frequent. So different are the forms assumed by this plant when growing in the water and on land, that the varieties might well be taken for two distinct species. In the water, the stems are 2—3 feet long, being supported by long-stalked, floating, smooth leaves; on land, the stems are about a foot high, and the leaves narrow and rough. In both forms of the plant the spikes of flowers are rose-coloured and handsome.—Fl. July—September. Perennial.

7. *P. Persicária* (Spotted Persicaria).—*Stem* erect, branched; *leaves* narrow, tapering, often spotted; *flowers*

in spikes; *stamens* 6; *styles* forked; *stipules* fringed.—Waste and damp ground, abundant. A common weed 1—2 feet high, distinguished by its rather large leaves stained with purple, and numerous oblong spikes of greenish or pinkish-white flowers.—Fl. July, August. Annual.

* *P. lapathifolium* (Pale-flowered Persicaria) closely resembles the last; it is distinguished by having 2 distinct, instead of forked *styles*, and by not having the *stipules* fringed; in both species the *leaves* are sometimes white with silky down.

8. *P. Hydropíper* (Water-Pepper).—*Stem* erect; *leaves* narrow, tapering; *flowers* in loose, drooping spikes; *stamens* 6.—Ditches and places where water has stood during winter, abundant. Well distinguished by its slender, drooping spikes of greenish flowers. The fresh juice is acrid, but not of an unpleasant flavour, and is said to cure pimples on the tongue.—Fl. August, September. Annual.

* Some botanists reckon three other species of *Polýgonum*, besides the foregoing, but they are of rare occurrence and difficult to be distinguished, with the exception of *P. minus*, several stations for which are given; it resembles *P. Hydropíper*, but is a smaller plant with upright *spikes*, narrower *leaves*, and nearly undivided *styles*.

2. RUMEX (*Dock, Sorrel*).

* *Flowers having both stamens and pistils; herbage not acid.*

1. *R. Hydrolápathum* (Great Water-Dock).—*Leaves* narrow, elliptical, tapering at both ends, the lower ones heart-shaped at the base; enlarged *segments* of the *perianth* bluntly triangular, tubercled.—River-banks, frequent. A picturesque plant 4—6 feet high, with exceedingly large leaves, and several stems which bear

numerous green flowers in almost leafless whorls.—Fl. July, August. Perennial.

* There are about ten other species of Dock, some of which are rarely to be met with, others far too common. The most abundant kind is *R. obtusifólius* (Broad-leaved Dock), too well known to need any description: *R. crispus* (Curled Dock) has acute curled leaves, and is also common: *R. sanguíneus* (Bloody-veined Dock) has the veins of its leaves tinged of a beautiful crimson; the other species are less frequent.

RUMEX ACETOSA (*Common Sorrel*).

* * *Stamens and pistils on different plants; herbage acid.*

2. *R. Acetósa* (Common Sorrel).—*Leaves* oblong, slightly arrow-shaped at the base.—Meadows, abundant. A slender plant about 2 feet high, with juicy stems and leaves, and whorled spikes of reddish-green flowers. Well known for the grateful acidity of its herbage.—Fl. June, July. Perennial.

3. *R. Acetosella* (Sheep's Sorrel).—*Leaves* tapering to a point, produced at the base into long arrow-shaped barbs.—Dry gravelly places, abundant. Much smaller than the last, and often tinged, especially towards the end of summer, of a deep red hue.—Fl. May—July. Perennial.

3. OXÝRIA (*Mountain Sorrel*).

1. *O. renifórmis* (Mountain Sorrel).—The only species.—Damp places near the summits of high mountains, frequent. Approaching the *Common Sorrel* in habit, but shorter and stouter. The *leaves* are all from the root, fleshy, and kidney-shaped; the *flowers* are green, and grow in clustered spikes: the herbage has a grateful acid flavour.—Fl. June—August. Perennial.

ORD. LXXI—ELÆAGNACEÆ.—OLEASTER TRIBE.

Stamens and *pistils* on separate plants. *Barren flowers* in catkins; *perianth* tubular; *stamens* 3—8, sessile on the throat of the perianth; *fertile flower* solitary, tubular, not falling off; *ovary* 1-celled; *style* short; *stigma* awl-shaped; *fruit* a single nut, enclosed within the fleshy perianth.—Trees or shrubs, with leaves which have no stipules, but are covered with scurfy scales. They are found in all parts of the northern hemisphere. The fruit of several species of Elæagnus is eaten in the East, and the flowers are highly fragrant, and abound in honey, which, in some parts of Europe, is considered a remedy for malignant fevers. The only British species is the Sea Buckthorn (*Hippophaë Rhamnoídes*).

1. Hippophaë (Sea Buckthorn).—*Stamens* and *pistils* on separate plants; *barren flowers* in small catkins; *perianth* of 2 valves; *stamens* 4, with very short filaments; *fertile flowers* solitary; *perianth* tubular, cloven at the summit; *style* short; *stigma* awl-shaped; *fruit* a 1-seeded nut, enclosed in the fleshy perianth. (Name of doubtful etymology.)

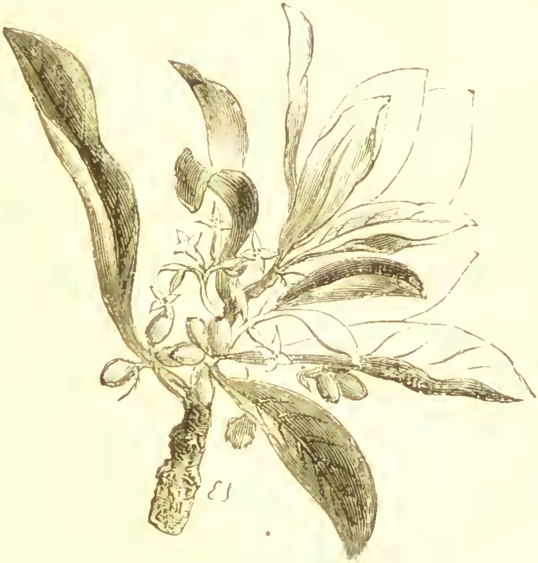
1. Hippophaë (*Sea Buckthorn*).

1. *H. Rhamnoídes* (Sea Buckthorn, Sallow-Thorn).—The only species.—Sand-hills and cliffs on the eastern coast of England. A thorny shrub 4—5 feet high, with very narrow, silvery leaves, small greenish flowers, which appear with the leaves in May, and numerous orange-coloured berries, which are of an acid flavour, and very juicy. The stems, roots, and foliage are said to impart a yellow dye.—Fl. May. Shrub. (See Miss Pratt's "Common Things of the Sea-side.")

Ord. LXXII.—THYMELACEÆ.—Daphne Tribe.

Calyx tubular, coloured, 4- rarely 5-cleft, occasionally having scales in its mouth; *stamens* 8, 4, or 2, inserted in the tube of the perianth; *ovary* 1-celled; *style* 1; *stigma* undivided; *fruit* a 1-seeded nut or drupe.—Shrubs with undivided laurel-like leaves, remarkable for their tough bark, which is of a highly acrid nature, causing excessive pain if chewed, and raising a blister if applied to the skin. Both the bark and root of Mezéreon (*Daphné Mezéreon*) are used in medicine: they are of very violent effect, whether taken inwardly or applied externally. The berries of Spurge-Laurel are poisonous to all animals except birds. In the East the bark of several species is manufactured into ropes and paper. The inner bark of *Lagetta lintearia*, when macerated and cut into thin pieces, assumes a beautiful net-like appearance, whence it has received the name of Lace-bark. In the South of Europe two plants belonging to this tribe are used to dye wool yellow. The seeds of *Inocarpus edúlis* are eaten when roasted, and have the taste of Chestnuts. *Daphné Japónica,* or *Indica,* with its varieties, is commonly cultivated in conservatories and gardens for the sake of the delicious fragrance of its flowers. The only British genus belonging to this tribe is—

1. Daphne (Spurge-Laurel).—Characters given above. (Name, the Greek for a *Laurel,* which it resembles in the character of its foliage.)



DAPHNE LAURÉOLA (*Spurge Laurel*).

1. Daphne (*Spurge-Laurel*).

1. *D. Lauréola* (Spurge-Laurel).—*Flowers* in drooping, axillary clusters ; *leaves* evergreen.—Woods, not un-

frequent. A low shrub, about 2 feet high, very little branched, and remarkable for its smooth, erect stems, which are bare of leaves except at the summit. The leaves are smooth, shining, and evergreen ; the flowers are green, and in mild weather fragrant ; the berries, which are egg-shaped and nearly black, are, as has been noted above, poisonous. From the tendency of this plant to bear its proportionally large leaves only on the summit of the stem, it has some resemblance to a group of Palms. If transplanted from the woods and potted, it may be employed with advantage as a stock on which to graft the delicious *D. Indica.* The operation should be performed in Spring with the leafy extremity of a shoot rather less in diameter than the stock.—Fl. March. Shrub.

* *D. Mezéreum* is occasionally found in situations where it is apparently wild : but it is not considered a native ; its purple, fragrant *flowers* appear before the leaves, and are sessile on the branches ; the *leaves* are not evergreen ; *berries* red.

ORD. LXXIII.—SANTALACEÆ.—SANDAL-WOOD TRIBE.

Perianth attached to the ovary, 4- or 5-cleft, valvate when in bud ; *stamens* as many as the lobes of the perianth, and opposite to them ; *ovary* 1-celled ; *style* 1 ; *stigma* often lobed ; *fruit* a hard, dry drupe.—The plants of this order are found in Europe and North America, in the form of obscure weeds ; in New Holland, the East Indies, and the South Sea Islands as large shrubs, or small trees. Some are astringent, others yield fragrant wood. Sandal-wood is the produce of *Sántalum album*, an East Indian tree, and is used both medicinally and as a perfume. In New Holland and Peru the seeds of some species are eaten. The only British plant belonging to this tribe is—

1. THÉSIUM (Bastard Toad-flax).—Characters given above. (Name of doubtful origin.)

1. THÉSIUM (*Bastard Toad-flax*).

1. *T. linophyllum* (Bastard Toad-flax).—The only British species.—Chalky hills, not common. A rather small plant, with a woody *root*, nearly prostrate *stems*, very narrow, pointed *leaves*, and leafy clusters of whitish *flowers*.—Fl. July. Perennial.

ORD. LXXIV.—ARISTOLOCHIACEÆ.—BIRTHWORT TRIBE.

Perianth attached to the ovary below, tubular above, with a wide mouth; *stamens* 6—12 inserted on the ovary; *ovary* 3—6-celled; *style* 1; *stigmas* rayed, as many as the cells of the ovary; *fruit* 3—6-celled, many seeded.—Herbs or shrubs, often climbing, with simple leaves, and solitary, axillary flowers, very abundant in the warmer parts of South America, but rare elsewhere. The plants of this order are generally bitter, tonic and stimulant. The dried and powdered leaves of Asarabacca (*Ásarum Europæum*) are used in the preparation of cephalic snuffs, exciting sneezing, and giving relief to head-ache and weak eyes. Virginian Snake-root (*Aristolóchia serpentaria*) and other allied species are used as antidotes to the bite of venomous snakes. The juice extracted from the root of a South American species is said to have the power of stupifying serpents if placed in their mouths. Other African species are said to be used by the Egyptian jugglers to stupify the snakes with which they play tricks during the exhibition of their art. The wood of Aristolochia is remarkable for not being arranged in concentric layers, but in wedges. A thin slice is a beautiful object for examination under a microscope of low power.

1. ARISTOLÓCHIA (*Birthwort*).—*Perianth* tubular, curved, swollen at the base, the mouth dilated on one side; *anthers* 6, inserted on the style; *stigma* 6-lobed; *capsule* 6-celled. (Name in Greek denoting the supposed medicinal virtues of the plant).

2. ÁSARUM (Asarabacca).—*Perianth* bell-shaped, 3-cleft; *stamens* 12 inserted at the base of the style; *stigma* 6-lobed; *capsule* 6-celled. (Name from the Greek *a*, not, and *seira*, a wreath, denoting that the plant was by the ancients excluded from garlands.)

1. ARISTOLÓCHIA (*Birthwort*).

1. *A. Clematítis* (Birthwort).—The only species found growing in wild situations in Britain, but not considered indigenous.—Woods, and among ruins in the east and south of England, rare. A singular plant, with creeping *roots*, slender, unbranched, erect *stems*, and large heart-shaped *leaves*; the *flowers*, which grow several together, are of a dull yellow colour, swollen at the base, contracted above, and expanding into an oblong *lip* with a short point.—Fl. July, August. Perennial.

2. ÁSARUM (*Asarabacca*).

1. *A. Europæum* (Asarabacca).—The only species found in Britain, and not considered indigenous.—Woods in the North, rare. A curious plant, consisting of a very short *stem*, bearing two large shining *leaves*, and a solitary dull-green drooping *flower*.—Fl. May. Perennial.

ORD. LXXV.—EMPETRACEÆ.—CROW-BERRY TRIBE.

Stamens and *pistils* on separate plants; *perianth* of several scales arranged in 2 rows, the inner resembling petals; *stamens* equal in number to the inner scales, and alternate with them; *ovary* of 3, 6, or 9 cells, on a fleshy disk; *style* 1; *stigma* rayed; *fruit* fleshy, with long cells; *seeds* 1 in each cell. Small heath-like evergreen shrubs, with minute axillary flowers, chiefly inhabiting Europe and North America. The leaves and fruit are slightly acid. The berries of the Crow-berry

(*Émpetrum nigrum*), though of an unpleasant flavour, are eaten in the Arctic regions, and are considered as a preventive of scurvy.

1. Émpetrum (Crow-berry).—*Perianth* of 3 outer and 3 inner scales. (Name in Greek signifying growing *on a rock.*)

1. Émpetrum (*Crow-berry*).

1. *E. nigrum* (Black Crow-berry, Crake-berry).—The only British species; abundant on mountainous heaths in the North.—A small, prostrate shrub, with the habit of a Heath. The *stems* are much branched; the *leaves* are oblong, very narrow, and have their margins so much recurved as to meet at the back; the *flowers* are small and purplish, growing in the axils of the upper leaves. The berries, which are black, are much eaten by moor-fowl.—Fl. May. Perennial.

Ord. LXXVI.—EUPHORBIACEÆ.—Spurge Tribe.

Stamens and *pistils* in separate flowers; *perianth* lobed, with various scales or petal-like appendages; *stamens* varying in number and arrangement; *ovary* mostly 3-celled, with as many *styles* and *stigmas*; *fruit* generally 3-celled and 3-seeded.—A large order, very difficult to be defined even by the experienced botanist, and, therefore, very likely to puzzle the beginner, who must not be disheartened if he is a long while in reducing to their place in the system those plants belonging to it which he first meets with. Linnæan botanists differ as to the Class in which the Spurges should be placed; nor is it agreed upon to which Sub-class in the Natural System they should be referred; for, though the European species have only a single *perianth*, many of the tropical genera are undoubtedly furnished with both *sepals* and *petals*. The order contains nearly 200 genera, and it is necessary to examine many of these, before the relation can be traced between those families which most differ. The number of species is thought to be not less than 2,500, which are distributed over most of the tropical and temperate regions of the globe, especially the warmer parts of America. They are either trees, shrubs, or herbs, and some kinds have the external habit of the cactus tribe. Among so numerous an assemblage of plants, we should expect to find a great dissimilarity of properties, which, indeed, exists to a certain extent; yet nearly all agree in being furnished with a juice, often milky, which is highly acrid, narcotic, or corrosive, the intensity of the poisonous property being usually proportionate to the abundance of the juice. Of the genus *Euphórbia*, Spurge, which gives name to the order, ten or twelve species are natives of Britain. The British Spurges are all herbaceous, and remarkable for the singular structure of their green flowers, and their acrid milky juice, which exudes plentifully when either the stems or leaves are wounded. A small quantity of this placed upon the tongue produces a burning heat in the mouth and throat, which continues for many hours. The unpleasant sensation may be allayed by frequent draughts of milk. The roots of several of the common kinds enter into the composition of some of the quack fever medicines; but they are too violent in their action to be used with safety. The Irish Spurge is extensively used by the peasants of Kerry for poisoning, or rather stupifying, fish. So powerful are its effects, that a small creel, or basket, filled with the bruised plant, suffices to poison the fish for several miles down a river. *Euphórbia Láthyris* is sometimes, though erroneously, called in England the Caper-plant. Its unripe seeds are pickled, and form a dangerous substitute for genuine capers, which are the unexpanded flower-buds of *Cáparis spinósa*, a shrub indigenous to the most southern countries of Europe. Among the foreign Spurges, some species furnish both the African and American savages with a deadly poison for their arrows. Another, called in India *Tirucalli*, furnishes an acrid juice, which is used in its fresh state for raising blisters. Other kinds are used in various parts of the world as medicines, but require to be administered with caution. The gum resin, *Euphorbium*, of chemists, is procured from three species growing in Africa and the Canaries, by wounding the stems, and collecting in leathern bags the sap which exudes. It is an acrid poison, highly inflammable, and so violent in its effects as to produce severe inflammation of the nostrils if those who are employed in powdering it do not guard themselves from its dust. Pliny relates that the plant was discovered by King Juba, and named by him after his physician, Euphorbus. The Manchineel tree (*Hippómané Mancinella*) is said to be so poisonous, that persons have died from merely sleeping beneath its shade. Its juice is pure white, and a single drop of it falling upon the skin burns like fire, forming an ulcer often difficult to heal. The fruit, which is beautiful and looks like an apple, contains a similar fluid, but in a milder form; the burning it causes in the lips of those who bite it guards the careless from the danger of eating it. *Jatrópha Manihót*, or Manioc, is a shrub about six feet high, indigenous to the West Indies and South America, abounding in a milky juice of so poisonous a nature, that it has been known to occasion death in a few minutes. The poisonous principle, however, may be dissipated by heat, after which process the root may be converted into the most nourishing food. It is grated into a pulp, and subjected to a heavy pressure until all the juice is drained off. The residue, called *cassava*, requires no further preparation, being simply baked in the form of thin cakes on a hot iron hearth. This bread is so palatable to those who are accustomed to it, as to be preferred to that made from wheaten flour; and Creole families, who have changed their residence to Europe, frequently supply themselves with it at some trouble and expense. The fresh juice is highly poisonous; but, if boiled with meat and seasoned, it makes an excellent soup, which is wholesome and nutritious. The heat of the sun even is sufficient to dissipate the noxious properties; for, if it be sliced and exposed for some hours to the direct rays of the sun, cattle may eat it with perfect safety. The roots are sometimes eaten by the Indians, simply roasted, without being previously submitted to the process of grating and expressing the juice. They also use the juice for poisoning their arrows, and were acquainted with the art of converting it into an intoxicating liquid before they were visited by Europeans. By washing the pulp in water and suffering the latter to stand, a sediment of starch is produced, which, under the name of *tapioca*, is extensively imported into Europe, where it is used for all the purposes to which arrow-root and sago are applied. It is light, digestible, and nourishing, so much so, indeed, that half a pound a day is said to be sufficient to support a healthy man. Caoutchouc, or India-rubber, is a well-known elastic gum, furnished in greater or less abundance by many plants of this order, but especially by a South American tree, *Siphónia* or *Hévea elástica*.

The fragrant aromatic bark called cascarilla is produced by a shrub belonging to this order, *Croton Eleuthéria*, a native of the Bahamas, and by other species of *Croton* indigenous to the West Indies and South America. Croton oil is the product of *Croton Tiglium*, and is so violent a medicine, as to be rarely administered until all other remedies have failed. Castor-oil is expressed from the seeds of *Ricinus commúnis*, an African tree, frequently to be met with in English gardens under the name of *Palma-Christi*, where, however, it only attains the rank of an annual herbaceous plant. The Box is the only British tree belonging to this Order, of the poisonous properties of which it partakes, though to a limited extent. In some parts of Persia it is very abundant; and in these districts it is found impossible to keep camels, as the animals are very fond of browsing on the leaves, which kill them. The Dog-Mercury (*Mercuriális perennis*) is an herbaceous plant, common in our woods, and an active poison; another species, *M. annua*, is less frequently met with, and, though poisonous, is not so virulent as the other species.

1. EUPHÓRBIA (Spurge).—*Perianth* or *involucre* bell-shaped, containing 12 or more *barren flowers* or *stamens*, and 1 *fertile flower* or *pistil*; *ovary* 3-lobed; *styles* 3; *stigmas* 2-cleft; *capsule* 3-celled, 3-seeded. (Name from Euphorbus, physician to Juba, an ancient king of Mauritania, who first employed the plant as medicine.)

2. MERCURIÁLIS (Mercury).—*Stamens* and *pistils* on different plants.—*Perianth* 3-cleft to the base; *barren flower, stamens* 9, or more; *fertile flower, styles* 2; *ovary* 2-lobed; *capsule* 2-celled, 2-seeded. (Name in honour of the heathen god Mercury.)

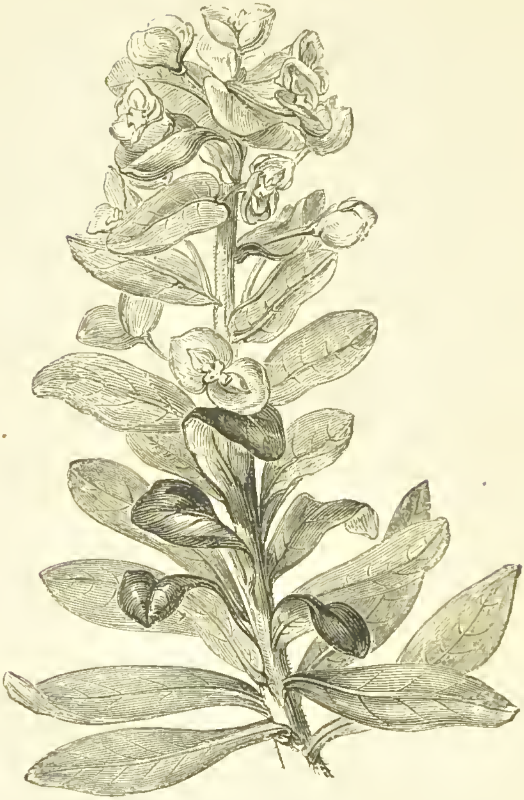
3. BUXUS (Box).—*Stamens* and *pistils* in separate flowers, but on the same plant.—*Perianth* 4-cleft to the base; *barren flower* with 1 bract; *stamens* 4; *fertile flower* with 3 bracts; *styles* 3; *capsule* with three horns, 3-celled; *cells* 2-seeded. (Name, the Latin name of the tree.)

1. EUPHÓRBIA (*Spurge*).

* *Involucre tipped with pointed or angular glands.*

1. *E. amygdaloídes* (Wood Spurge).—*Stem* branched above in an umbellate manner into about 5 rays; *rays* 2-forked; *bracts* perfoliate; *leaves* narrow, egg-shaped, hairy beneath; *glands* of the *involucre* crescent-shaped. —Woods, abundant. A common woodland plant, with somewhat shrubby stems, 1—2 feet high, conspicuous in spring and summer with its golden-green leaves and flowers, and in autumn with the red tinge of its stems and leaves.—Fl. March, April. Perennial.

* To this group belong *E. Peplus* (Petty Spurge), a very common garden weed, 3—4 inches high, distinguished by its pale hue, its 3-rayed and forked umbel of numerous flowers, the involucres of which are crescent-



EUPHÓRBIA AMYGDALOÍDES (*Wood Spurge*).

shaped, with long horns: *E. exígua* (Dwarf Spurge), common in corn-fields, distinguished from the preceding by its narrow, glaucous leaves, and slenderer habit: *E. Parálias* (Sea Spurge), a stout, somewhat shrubby plant, growing in large masses on the sandy sea-shore, and remarkable for its numerous imbricated, glaucous leaves: and *E. Portlándica* (Portland Spurge), also a marine species, readily distinguished from the last by its less robust habit, and the red tinge of its stems and leaves: *E. Láthyris* (Caper Spurge), a tall herbaceous species, 2—4 feet high, common in gardens, is remarkable for the glaucous hue of its foliage, its heart-shaped, taper-pointed bracts, and very large capsules, which abound to a great degree, as well as the rest of the plant, in the milky, acrid fluid found throughout the family.

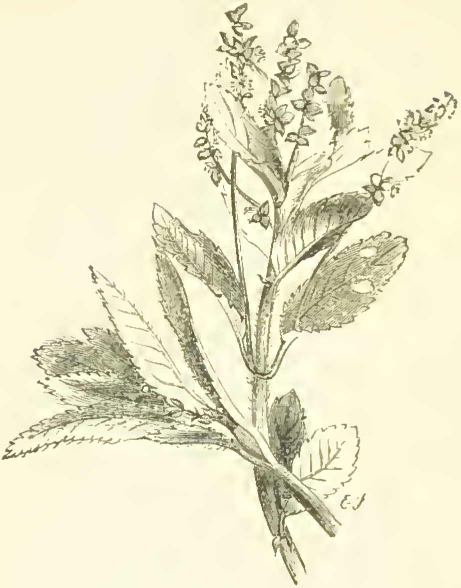
* * *Glands of the involucre not pointed.*

2. *E. helioscópia* (Sun Spurge).—*Umbel* of 5 rays, which often are repeatedly forked; *leaves* oblong, tapering towards the base, serrated above; *capsule* smooth.—Cultivated ground, abundant. Varying in size from a few inches to 2 feet in height, but easily distinguished by the golden-green hue of its spreading umbel, which is large in proportion to the size of the plant, and has several serrated leaves at its base.—Fl. July, August. Annual.

* *E. platyphýlla* (Water Spurge) is a rare species, which might be mistaken for a small specimen of *E. helioscópia*; it is, however, well marked by having its leaves slightly hairy beneath, and its capsules rough with warts at the back: *E. Peplis* (Purple Spurge) is peculiar to the sandy sea-shore; it grows quite flat on the sand, sending out several branches at right angles to the root, in a circular manner; the whole plant is of a beautiful purple hue. Several other species of *Spurge* are described by British botanists, but they are either very rare, or not considered indigenous.

2. MERCURIÁLIS (*Mercury*).

1. *M. perennis* (Dog's Mercury).—Perennial; *stem* simple; *leaves* stalked, roughish.—Woods and shady places, abundant. A common, woodland, herbaceous plant; sending up from its creeping roots numerous undivided stems about a foot high. Each stem bears several pairs of rather large, roughish leaves, and



MERCURIÁLIS PERENNIS (*Dog's Mercury*).

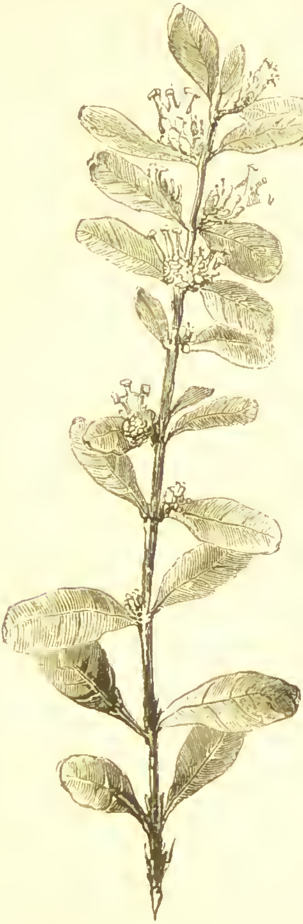
among the upper ones grow the small, green flowers, the barren on long stalks, the fertile sessile.—Fl. April, May. Perennial.

2. *M. annua* (Annual Mercury).—Annual; *stem* branched; *leaves* sessile, smooth.—Waste places; not common. Taller than the last, and branched. The leaves are smaller and of a light green hue. Barren and fertile flowers are sometimes found on the same plant.—Fl. August. Annual.

3. BUXUS (*Box*).

1. *B. sempervīrens* (Common Box-tree).—A small tree growing in great abundance, and apparently wild,

on Box-hill, Surrey, where it ripens its seeds. A dwarf variety is common in gardens. For a full description of this valuable tree, see "Forest Trees of Britain."—Fl. April. Small tree.



BUXUS SEMPERVIRENS (*Common Box-tree*).

ORD. LXXVII.—CALLITRICHACEÆ.—WATER STAR-WORT TRIBE.

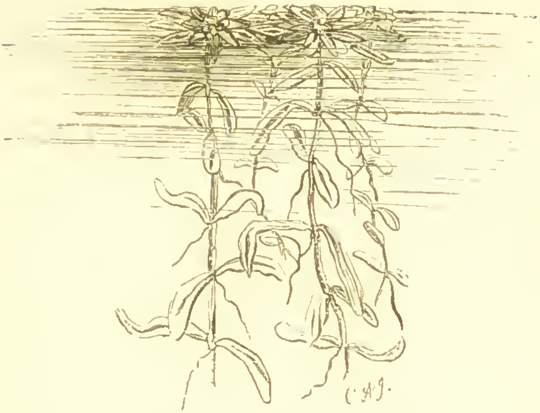
Flowers in different parts of the same plant, axillary, solitary, very minute, imperfect, with two white bracts at the base; *calyx* and *corolla* absent; *barren flower*, with one stamen, or very rarely two; filament thread-like, bearing a 1-celled anther, which opens at the summit by two transverse valves; *fertile flower*, *ovary* 4-angled, 4-celled; *styles* 2, awl-shaped; *stigma* simple; *fruit* 4-celled, 4-lobed, 4-seeded, flattened laterally, not opening.—Small aquatic, herbaceous plants, with long, weak, tangled *stems*, which are usually submerged, opposite simple entire *leaves*, of which the upper alone float on the surface of the water, and long thread-like silvery roots, which proceed from the joints of the stem, and are either attached to the soil below or are suspended in the water.

1. CALLÍTRICHÉ (Water Star-wort).—Characters given above.

1. CALLÍTRICHÉ (*Water Star-wort*).

1. *C. verna* (Vernal Water Star-wort).—*Leaves* in pairs, united at the base; *flowers* in the axils of the leaves; *carpels* bluntly keeled at the back.—Streams and stagnant water; everywhere. An aquatic plant with long slender stems, which send out shining roots from the joints; either growing in running water, when the leaves are usually very narrow, or in stagnant water, when the upper leaves are broader, and float on the surface, crowded into a starry form, the stamens being the only parts of the plant actually raised above it.—Fl. May—July. Annual.

2. *C. autumnális* (Autumnal Water Star-wort).—*Carpels* winged at the back.—Resembling the last, and growing in similar situations; but rare. In this species the whole plant is submerged, all the leaves are narrow and abrupt, and of a deeper green.—Fl. June—October. Annual.



CALLÍTRICHÉ VERNA (*Vernal Water Star-wort*).

* Two other British species of *Callítriché* are described by botanists, which vary in a slight degree from the preceding, but they are not of common occurrence, and are on other accounts scarcely deserving of a separate notice.

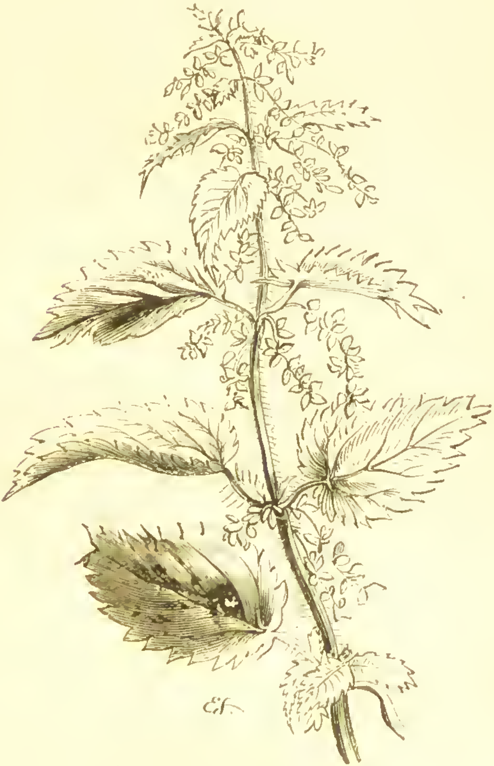
ORD. LXXVIII.—URTÍCACEÆ.—NETTLE TRIBE.

Stamens and *pistils* generally in separate flowers, and often on different plants ; *perianth* divided, not falling off, sometimes wanting ; *stamens* equal in number to the lobes of the perianth, and opposite to them ; *anthers* curved inwards in the bud, and often bursting with elasticity ; *ovary* 1, simple ; *fruit* a hard and dry 1-seeded capsule.—A difficult order, the limits of which are variously assigned by different botanists. In its widest extent it contains a number of valuable fruits, as the famous Bread-fruit, and Jack-fruit (*Artocarpus incisifolia* and *A. integrifolia*), the Fig, Mulberry, and Sycamore of the Scriptures. The Upas-tree of Java, and *Palo-de-vaca* or Cow-tree of Demerara, are arranged in the same Order, with many others. In its more limited extent the Nettle Tribe contains 23 families, comprising, almost entirely, rough-leaved plants, which, though they occasionally acquire the stature of trees, have, nevertheless, little more than an herbaceous texture, their wood being remarkable for its lightness and sponginess. They are found in most parts of the world, occurring as weeds in the temperate and colder regions, and attaining a larger size in hot climates. The British species of Nettle (*Urtíca*) are well known for the burning properties of the juice contained in the stings, with which their foliage is plentifully armed. But, painful as are the consequences of touching one of our common Nettles, they are not to be compared with the effects of incautiously handling some of the East Indian species. A slight sensation of pricking is followed by a burning heat, such as would be caused by rubbing the part with a hot iron: soon the pain extends, and continues for many hours, or even days, being attended by symptoms such as accompany lock-jaw and influenza. A Java species produces effects which last for a whole year, and are even said to cause death. Specimens of the Tree-Nettle were measured by Backhouse, in Australia, the trunks of which were found to measure 18, 20, and 21 feet in circumference. In some species the fibre is so strong that cordage is manufactured from it. The burning property of the juice is dissipated by heat, the young shoots of the common Nettle being often boiled and eaten as a pot-herb, and the tubers of *Urtíca tuberósa* are eaten as potatoes.

1. Urtíca (Nettle).—*Stamens* and *pistils* in separate flowers, on the same or different plants; *barren flower*, *perianth* of 4 leaves, *stamens* 4; *fertile flower*, *perianth* of 2 leaves, 1-seeded. (Name from the Latin *uro*, to burn, from its stinging properties.)

2. Parietaria (Pellitory).—*Stamens* and *pistils* in the same flower; *perianth* 4-cleft; *stamens* 4; *filaments* at first curved inwards, finally spreading with an elastic spring; *fruit* 1-seeded. (Name from the Latin *paries*, a wall, where these plants often grow.)

3. HÚMULUS (Hop).—*Stamens* and *pistils* on different plants; *barren flower*, *perianth* of 5 leaves; *stamens* 5; *fertile flower*, a catkin composed of large, concave scales, each of which has at its base two *styles* and 1 seed. (Name from the Latin *humus*, rich soil, in which the plant flourishes.)



URTÍCA DIOÍCA (*Great Nettle*).

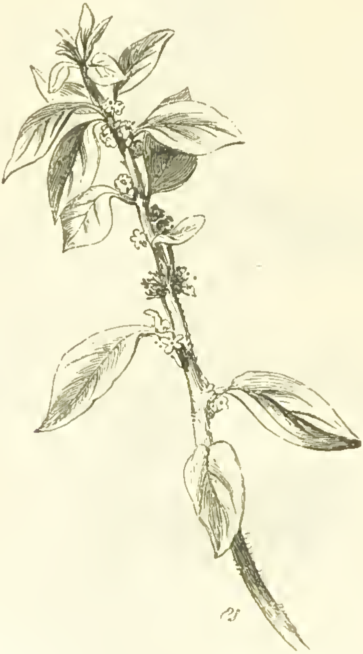
1. URTÍCA (*Nettle*).

1. *U. dioíca* (Great Nettle).—*Leaves* heart-shaped at the base, tapering to a point; *flowers* in long, branched

clusters.—A common weed, too well known to need further description.—Fl. July, August. Perennial.

2. *U. urens* (Small Nettle).—*Leaves* elliptical ; *flowers* in short, nearly simple clusters.—Waste places, abundant. Smaller than the last, but closely resembling it in habit and properties.—Fl. July—October. Annual.

* *U. pilulífera* (Roman Nettle) is an annual species, of local occurrence ; it bears its flowers in globular heads.

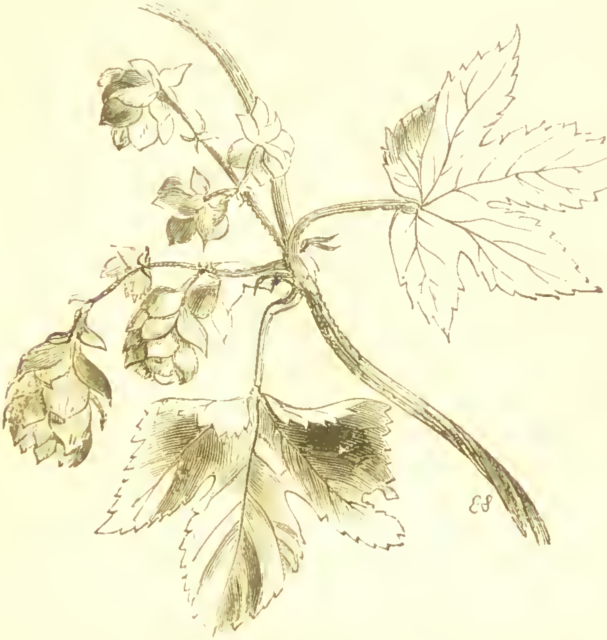


PARIETARIA OFFICINALIS (*Common Pellitory-of-the-wall*).

2. Parietaria (*Pellitory-of-the-wall*).

1. *P. officinális* (Common Pellitory-of-the-wall).—The only British species.—A much-branched, bushy, herba-

ceous plant, with narrow, hairy *leaves*, reddish, brittle *stems*, and small, hairy *flowers* which grow in clusters in the axils of the leaves. The *filaments* are curiously jointed and elastic; so that if touched before the expansion of the flower, they suddenly spring from their incurved position and shed their pollen. In rural districts an infusion of this plant is a favourite medicine.—Fl. all the summer. Perennial.



HÚMULUS LÚPULUS (*Common Hop*).

3. Húmulus (*Hop*).

1. *H. Lúpulus* (Common Hop).—A beautiful climbing plant, commonly cultivated for the sake of its *catkins*, which are used to give a bitter flavour to beer, and naturalized in many places.—Fl. July. Perennial.

ORD. LXXIX.—ULMÁCEÆ.—ELM TRIBE.

Stamens and *pistils* in the same or different flowers; *perianth* bell-shaped, often irregular; *stamens* equalling in number, and opposite to the lobes of the perianth; *ovary* not attached to the perianth, 2-celled, *styles* and *stigmas* 2; *fruit* 1 or 2-celled, not bursting, drupe-like, or furnished with a leafy border.—Trees or shrubs with rough leaves and clustered flowers (never in catkins) inhabiting temperate climates, and often forming valuable timber-trees. The most important genus is that of Elm (*Ulmus*), a full account of which will be found in "Forest Trees of Britain," vol. ii.

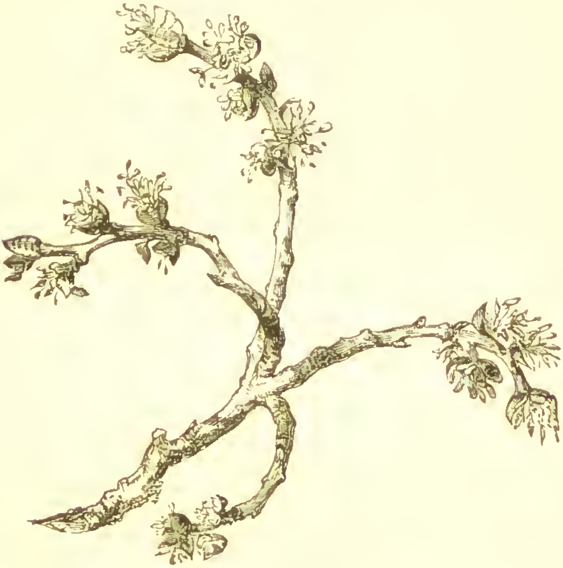
SEED OF ELM.

1. ULMUS (Elm).—*Perianth* bell-shaped, 4—5-cleft, persistent; *stamens* 5; *styles* 2; *capsule* thin and leaf-like, containing a single seed. (Name, the Latin name of the tree).

1. ULMUS (*Elm*).

1. *U. campestris* (Common small-leaved Elm).—*Leaves* obliquely wedge-shaped at the base, tapering to

a point ; *fruit* oblong, deeply cloven.—Hedge-rows and parks, abundant.—Fl. March. Tree.



ULMUS CAMPESTRIS (*Common small-leaved Elm*).

* For a further description of this and the other British species of Elm, see " Forest Trees of Britain."

ORD. LXXX.—AMENTACEÆ.—CATKIN-BEARING TRIBE.

Stamens and *pistils* in separate flowers, and often on different plants ; *barren flowers* in heads or catkins, composed of scales ; *stamens* 1—20, inserted on the scales ; *fertile flowers* clustered, solitary, or in catkins ; *ovary* usually simple ; *stigmas* 1 or more.—An extensive order, containing a large number of trees which are highly valued for their fruit, timber, bark, and other minor productions. They are most abundant in temperate climates, comprising a large proportion of our English Forest Trees. They have been subdivided by botanists into several sub-orders, or groups, four of which contain British specimens. The first sub-order, SALICÍNEÆ (the Willow group), is distinguished by bearing all its flowers in catkins, the fruit being a 2-valved capsule, containing numerous seeds tufted with down. In the sub-order MYRÍCEÆ (Sweet-Gale group), the flowers are all in catkins, and the ripe fruit assumes a drupe-like appearance, from being invested by the fleshy scales of the catkin. In BETULÍNEÆ (Birch group) the flowers are all in catkins, and the fruit is thin and flattened, containing 1 or 2 seeds, which are not tufted with down. In CUPULÍFERÆ the fertile flowers grow in tufts or spikes, the barren flowers in catkins, and the fruit is either wholly or partially invested with a tough case, termed a *cúpula*. By some modern botanists these groups are severally treated as distinct orders under the names of SALICACEÆ, MYRICACEÆ, BETULACEÆ and CUPULIFERÆ; but it has been thought expedient to retain the few examples described in this volume under the comprehensive order Amentaceæ. All the British Trees belonging to the order are described at length in "Forest Trees of Britain," where mention also occurs of many foreign species, which are worthy of notice for their application to useful purposes or for their peculiar productions.

Sub-order I.—SALICÍNEÆ.—*Willow Group.*

1. SALIX (Willow).—*Stamens* and *pistils* on different plants (*diœcious*); *scales* of the *catkin* imbricated entire: *stamens* 1—5; *stigmas* 2; *capsule* of 2 valves, 1-celled: *seeds* numerous, tufted with cottony down. (Name, the Latin name of the plant.)

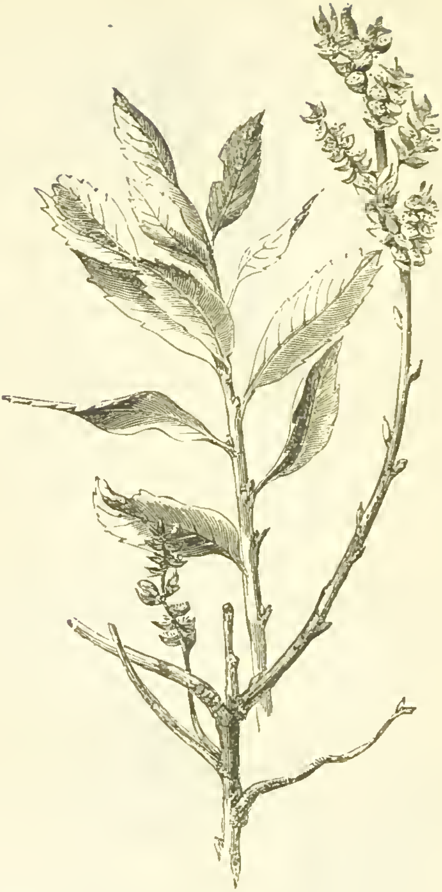
2. PÓPULUS (Poplar).—*Stamens* and *pistils* on different plants; *scales* of the *catkin* jagged; *stamens* 8—30; *stigmas* 4 or 8; *capsule* of 2 valves, obscurely

SALIX (*Willow*).

2-celled; *seeds* numerous, tufted with cottony down. (Name from the Latin *pópulus,* and signifying *the tree*

PÓPULUS (*Poplar*).

of the people, which it was considered to be at Rome and in France during the Revolutions.)

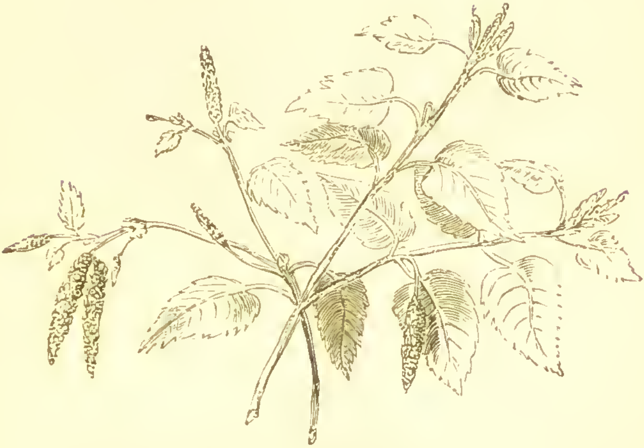


MYRÍCA (*Sweet-Gale*).

Sub-order II.—MYRÍCEÆ.—*Sweet-Gale Group.*

3. MYRÍCA (Sweet-Gale).—*Stamens* and *pistils* on different plants; *scales* of the *catkin* concave; *stamens*

4—8; *stigmas* 2; *fruit* drupe-like, 1-seeded. (Name the Greek name of the *Tamarisk.*)



BÉTULA ALBA (*White Birch*).

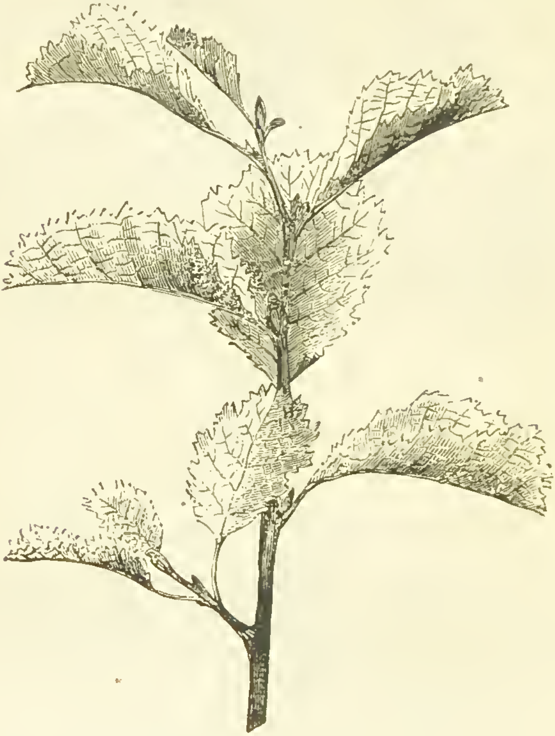
Sub-order III.—BETULÍNEÆ.—*Birch Group.*

4. BÉTULA (Birch).—*Stamens* and *pistils* in separate flowers (*monœcious*); *scales* of the *barren catkin* in threes; *stamens* 10—12; *scales* of the *fertile catkin* 3-lobed, 3-flowered; *stigmas* 2; *fruit* flattened, 1-seeded, winged. (Name, the Latin name of the tree.)

* Two species of Birch are natives of Britain; *B. alba*, the White Birch, a forest tree, which for lightness, grace, and elegance, stands unrivalled, and has been styled "the Lady of the Woods:" and *B. nana*, Dwarf Birch, a mountain shrub, with wiry branches, and numerous round, notched leaves, which are beautifully veined.

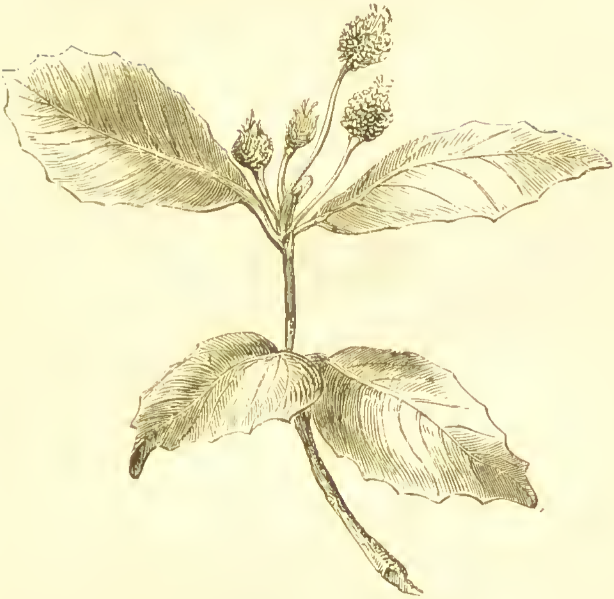
5. ALNUS (Alder).—*Stamens* and *pistils* in separate flowers; *scales* of the *barren catkin* 3-lobed, 3-flowered;

stamens 4 ; *scales* of the *fertile catkin* 2-flowered, permanent, becoming hard and dry ; *stigmas* 2 ; *fruit* flattened, not winged. (Name, the Latin name of the tree.)



ALNUS GLUTINÓSA (*Common Alder*).

* *Alnus glutinósa* (Common Alder) is the only British species belonging to this family. It is a widely diffused tree, growing in swampy ground throughout most of the temperate regions of the globe.



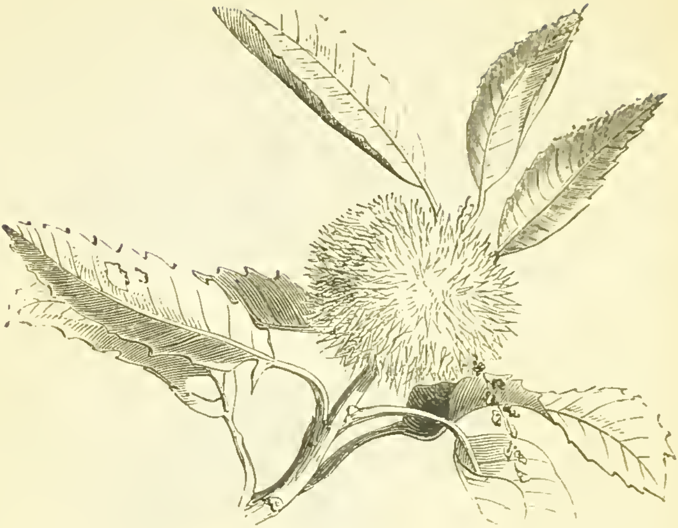
FAGUS SYLVÁTICA (*Common Beech*).

Sub-order IV.—CUPULÍFERÆ.—*Mast-bearing Group.*

* *Stamens and pistils in separate flowers* (*monœcious*).

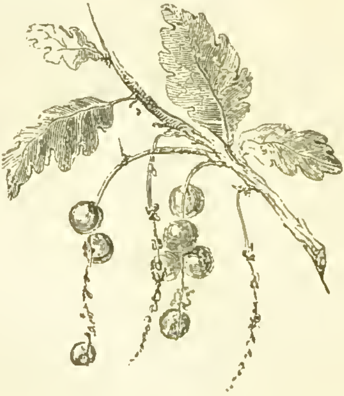
6. FAGUS (Beech).—*Barren flowers* in a globose catkin; *stamens* 5—15; *fertile flowers* 2 together, within a 4-lobed, prickly involucre; *stigmas* 3; *nuts* 3-cornered, enclosed in the enlarged involucre. (Name in Greek *phegos*, a species of Oak, in Latin *fagus*, a Beech.)

7. CASTÁNEA (Chestnut).—*Barren flowers* in a very long, spike-like catkin; *stamens* 10—20; *fertile flowers* 3 together, within a 4-lobed, very prickly involucre; *stigmas* 6; *nuts* not distinctly 3-cornered, enclosed in the enlarged involucre. (Name, the Latin name of the tree.)



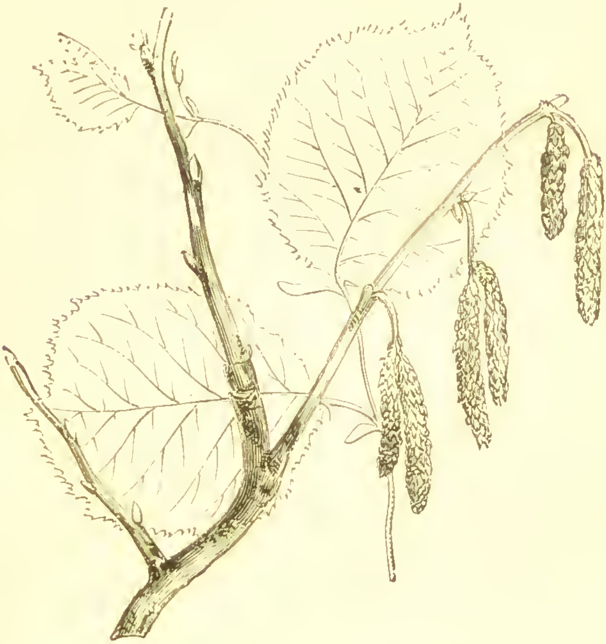
CASTÁNEA VULGÁRIS (*Spanish Chestnut*).

8. QUERCUS (Oak).—*Barren flowers* in a long, drooping catkin ; *stamens* 5—10 ; *fertile flowers* with a cup-



QUERCUS ROBUR (*Common Oak*).

shaped scaly involucre; *stigmas* 3; *fruit* an acorn. (Name, the Latin name of the tree.)

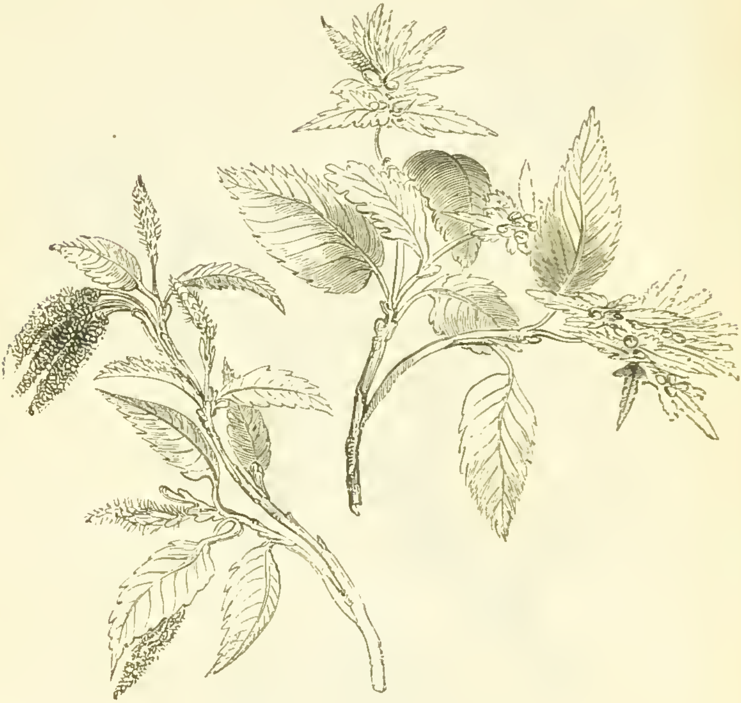


CÓRYLUS AVELLÀNA (*Common Hazel*).

9. CÓRYLUS (Hazel).—*Barren flowers* in a long, drooping, cylindrical catkin; *scales* 3-cleft; *stamens* 8; *fertile flowers* several, enclosed in a bud-like involucre; *stigmas* 2; *nut* enclosed in the enlarged jagged involucre. (Name, the Latin name of the tree.)

10. CARPÍNUS (Hornbeam).—*Barren flowers* in a long, cylindrical catkin; *scales* roundish; *fertile flowers* in a loose catkin; *scales* large and leaf-like, 3-lobed; *stigmas*

2; nut strongly ribbed. (Name, the Latin name of the tree.)

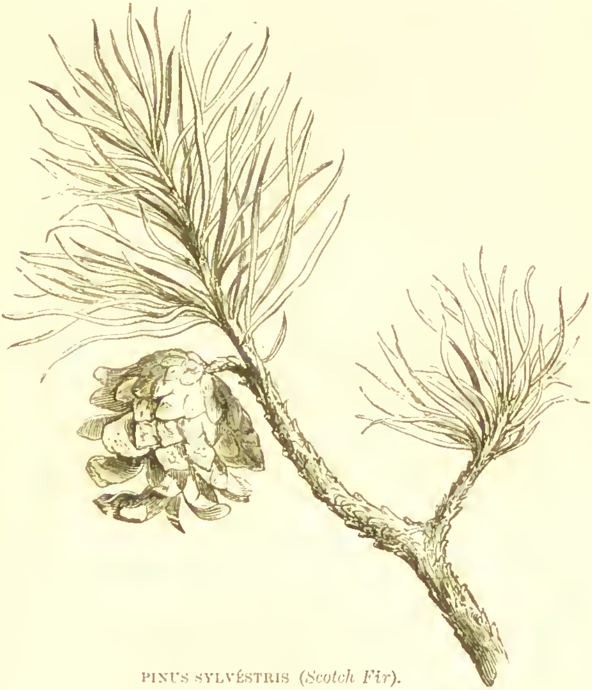


CARPÍNUS BÉTULUS (*Common Hornbeam*).

* For a full description of the trees belonging to this order, see "Forest Trees of Britain."

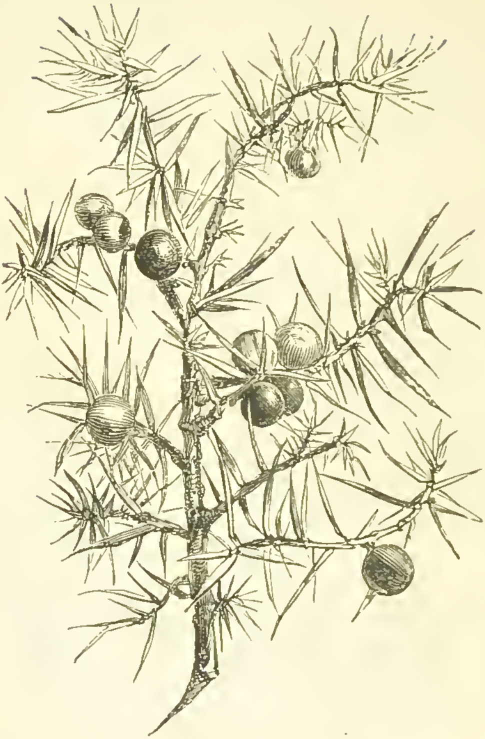
ORD. LXXXI.—CONIFERÆ.—FIR TRIBE.

Stamens and *pistils* in separate flowers, and often on different trees. *Stamens* collected in sets around a common stalk ; *fertile flowers* in *cones*, destitute of styles and stigmas ; *fruit* a *cone*, composed of hardened scales or bracts, bearing, at the base of each, naked seeds, which are often winged. For a full description of this important Tribe, see " Forest Trees of Britain," vol. ii.



PINUS SYLVÉSTRIS (*Scotch Fir*).

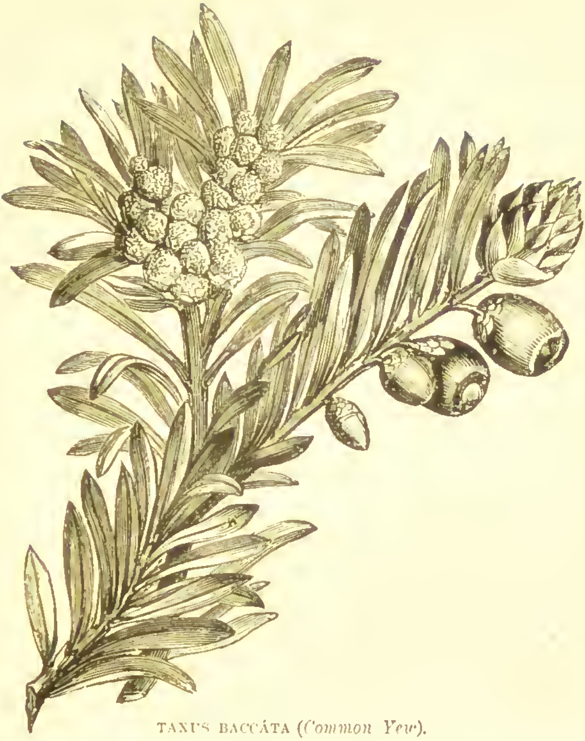
1. Pinus (Fir).—*Barren flowers* in clustered scaly catkins, the upper *scales* bearing sessile anthers ; *fertile flowers* in an egg-shaped catkin, which finally becomes a woody cone ; *seeds* winged. (Name, the Latin name of the tree.)



JUNÍPERUS COMMUNIS (*Common Juniper*).

2. JUNÍPERUS (Juniper).—*Barren flowers* in scaly catkins; *anthers* attached to the base of the scales; *fertile flowers* in catkins of a few united scales, which finally become a fleshy *berry* containing 3 seeds. (Name, the Latin name of the tree.)

* *J. communis* (Common Juniper) is a native of all the northern parts of Europe, and in Great Britain is generally found on hills and heathy downs, especially where the soil is chalky. The berries are much used to flavour hollands or geneva, a spirit distilled from corn.



TAXUS BACCÁTA (*Common Yew*).

3. TAXUS (Yew).—*Barren flowers* in oval catkins which are scaly below; *stamens* numerous; *fertile flowers* solitary, scaly below; *fruit* a naked seed, surrounded at the base by the enlarged pulpy scales. (Name, the Latin name of the tree.)

* *T. baccáta* (Common Yew), the only British Yew, is an evergreen tree, remarkable for its longevity. The foliage is poisonous; but the berries are said to be innocuous, being often eaten by children without ill effect. The variety called Irish Yew has erect instead of spreading branches.

Class II. MONOCOTYLEDONOUS PLANTS.

In the plants belonging to this class the *embryo* of the seed is accompanied by a single *cotylédon.* The stem consists of *woody fibre, cellular tissue,* and *spiral vessels ;* but there is no true *bark* nor *pith,* nor is the *wood* arranged in concentric layers. The stem increases in density (scarcely at all in diameter) by deposits at or near the centre ; hence the plants of this class are called Endogenous (increasing by additions on the inside). As new substance is deposited, the old layers of wood are pressed outwards, and thus the hardest part is near the circumference. The growth of the stem is usually produced by a single terminal *bud,* without the aid of buds in the axils of the leaves ; there are, however, exceptions to this rule, and the stem is often hollow. The principal *veins* of the *leaves* are parallel, not forming a complicated net-work. The *flowers* are furnished with *stamens* and *pistils,* 3 or some multiple of 3 being the predominating number of the parts of fructification. A large number are destitute of petals, the place of which is supplied by *scales* or *chaff* (glumes).

Sub-class I.

PETALOIDEÆ.

Flowers furnished with petals, arranged in a circular order, or without petals.[1]

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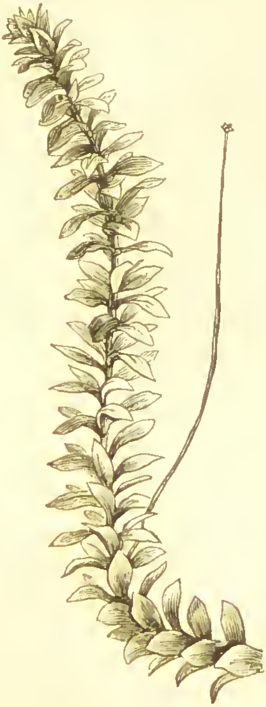
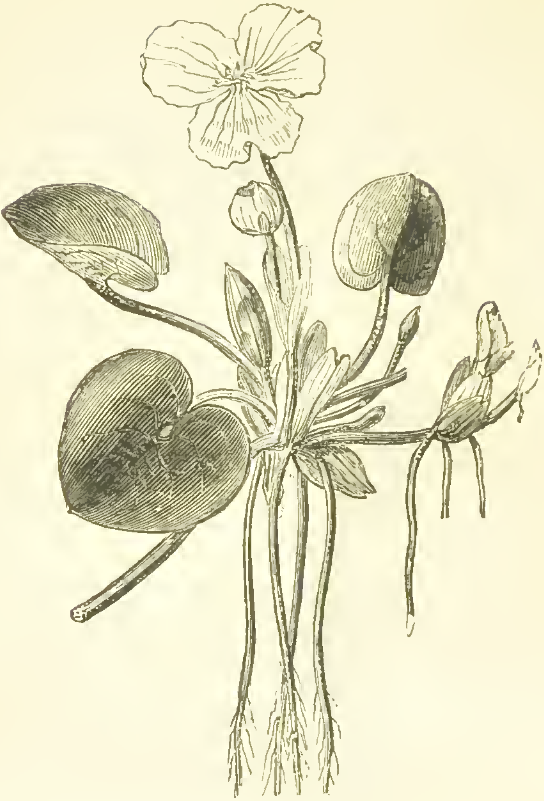
(1) Sub-class II., Glumaceæ, contains plants, which have, instead of petals, chaffy scales or *glumes,* which are not arranged in a circular order, as is the case with the Petaloideæ, but are imbricated, such as the Grasses and Sedges.

ORD. LXXXII.—HYDROCHARIDACEÆ.—FROG-BIT TRIBE.

Flower-buds enclosed in a sheath; *sepals* 3, green; *petals* 3; *stamens* 3, 9, 12 or more; *ovary* inferior, 1- or many-celled; *style* 1; *stigmas* 3—9; *fruit* dry or juicy, not bursting, 1- or many-celled.—A tribe of aquatic plants, often floating, among which the most remarkable is *Valisneria spirális*, the flower of which grows at the extremity of a long, spiral stalk. As the bud expands, the spire partially uncoils, allowing the

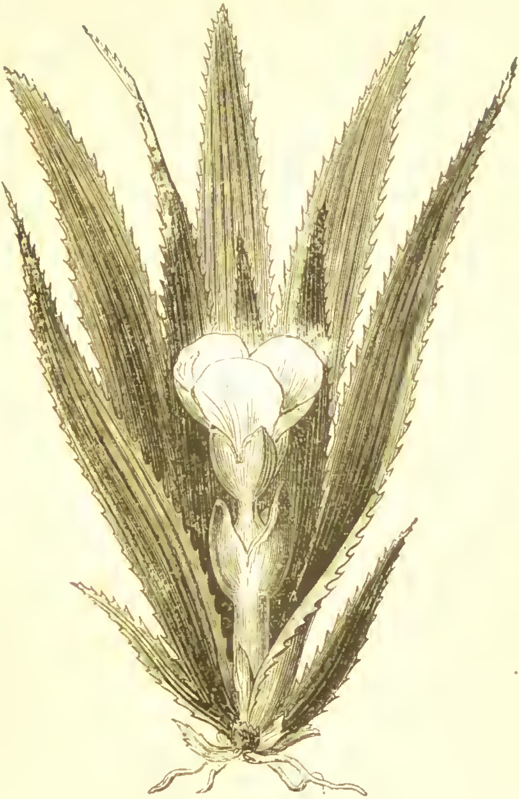


ANÁCHARIS ALSINÁSTRUM.



HYDRÓCHARIS MORSUS-RANÆ (*Frog-bit*).

flower to float on the surface for a few hours, and then contracts again, drawing the seed-vessel beneath the surface, there to ripen its seeds. The number of species is small, and two only are natives of Britain. Within the last few years, however, a species new to Britain has made its appearance, and has increased to such an alarming extent, as to impede the navigation of some of our canals. This is Anácharis Alsinástrum, a submerged aquatic, having much of the habit of *Potamogéton*



STRATIÓTES ALÓIDES (*Water-soldier*).

densus. It is a native of North America, but since its introduction has increased to an alarming extent. It is to be found in flower in still water in September.

1. HYDRÓCHARIS (Frog-bit).—*Stamens* and *pistils* on different plants; *stamens* 9—12; *ovary* 6-celled; *stigmas* 6. (Name from the Greek *hydor*, water, and *charis*, elegance, the plants being showy aquatics.)

2. Stratiótes (Water-soldier).—*Stamens* and *pistils* on different plants ; *stamens* about 12, surrounded by many imperfect ones ; *ovary* 6-celled ; *stigmas* 6. (Name, the Greek for a soldier, from its rigid, prickly, sword-shaped leaves.)

1. Hydrócharis (*Frog-bit*).

1. *H. Morsus-ranæ* (Frog-bit).—The only British species.—A floating aquatic, with creeping *stems*, roundish, stalked *leaves*, and delicate, white flowers which grow two or three together from a pellucid 2-leaved *sheath*.—Ponds and ditches, not general.—Fl. July, August. Perennial.

2. Stratiótes (*Water-soldier*).

1. *S. aloídes* (Water-soldier).—The only British species ; growing in ditches in the East of England.—The *roots* extend to some distance into the mud, and throw out numerous rigid prickly *leaves*, like those of an Aloe ; the flower-stalk is about 6 inches high, and bears at its summit a 2-leaved sheath, containing several delicate white *flowers*, bearing *stamens*, or one flower only, bearing *pistils*. It rises to the surface before flowering, and then sinks to the bottom.—Fl. July. Perennial.

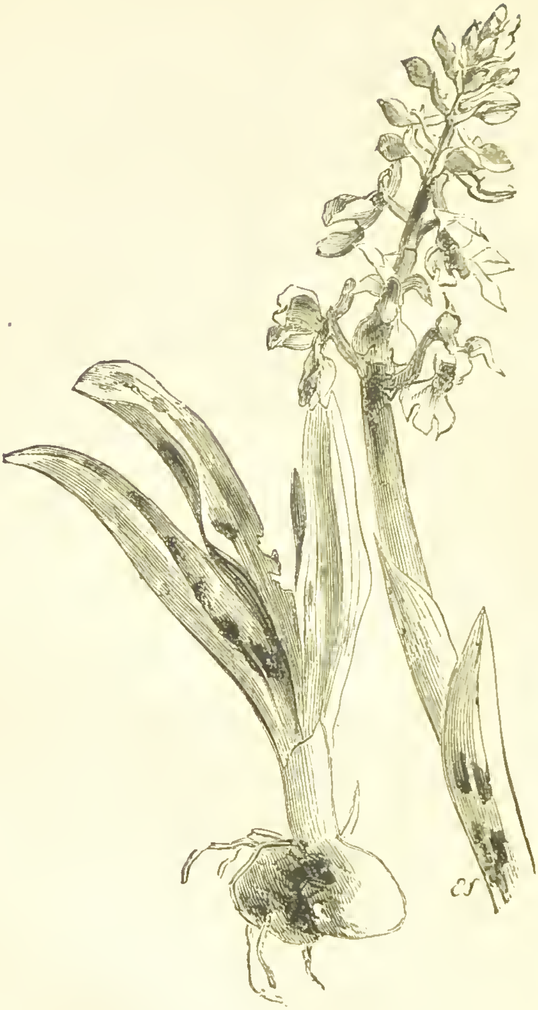
Ord. LXXXIII.—ORCHIDACEÆ.—Orchideous Tribe.

Sepals 3, often coloured ; *petals* 3, the lowest unlike the rest, and frequently spurred ; *stamens* and *style* united into a central column ; *pollen* powdery or viscid, sometimes raised in masses on minute stalks ; *ovary* 1-celled ; *stigma* a viscid hollow in front of the column ; *fruit* a 3-valved capsule, with 3 rows of seeds.—A very extensive tribe of perennial herbaceous plants, with fibrous or tuberous roots, fleshy or leathery leaves, all the veins of which are parallel, and flowers so variable in form as to defy general description, yet so peculiar that the slightest experience will enable the student to refer them to their proper tribe. British species have for the most part two or more glossy sheathing leaves, and bear their flowers in simple spikes or clusters. The colour of the flowers is purple, mottled with various other tints, flesh-coloured, white, or greenish. The structure of the lower lip of the corolla is in many cases most singular; sometimes resembling in form, size, and colour insects which naturally frequent the places where the flowers grow; such are the Bee, Fly, and Spider Orchis (*Ophrys apífera*, *O. muscífera*, and *O. aranífera*). In other instances the same organ presents a fantastic caricature of some more important subject of the animal kingdom; such are the Man, and Monkey Orchis (*Áceras anthropóphora*, and *Orchis macra*). The same mimicking extends to foreign species:—"So various are they in form," says Dr. Lindley, "that there is scarcely a common reptile or insect to which some of them have not been likened." Occasionally the structure is more complex: in *Caleána nigríta* the column is a boat-shaped box, resembling a lower lip; the lip itself forms a lid that exactly fits it, and is hinged on a claw, which reaches the middle of the column; when the flower opens, the lip turns round within the column and falls back, so that the flower being inverted, it stands fairly over the latter. The moment a small insect touches its point, the lip makes a sudden revolution, brings the point to the bottom of the column, and makes prisoner any insect which the box will hold. When it catches an insect, it remains shut as long as its prey continues to move about; but if no capture is made, the lid soon recovers its position. The rusty flowers of *Spiculæa ciliáta*, when spread open, may be compared to long-legged spiders, the lip, with a long solid plate, looking like their body, while an appendage at its point, which is apparently moveable, is not unlike the head of such a creature. Orchideous plants are to be found in all climates except the very coldest and driest; they are most abundant in the hot, damp regions of the tropics, where they exist in the greatest profusion, not, as in temperate countries, deriving their nourishment from the earth, but supported by the moisture that floats around them. Clinging to the trunks and branches of trees, to the stems of ferns, and even to the bare rock, they seem to adopt the habits of animals as well as to imitate their forms. In many of these the flowers only are conspicuous, the plant itself consisting of creeping, claw-like roots, and tufts of elliptical bulbs, from the summit of which spring a few tough leaves, and wiry, jointed stems, which seem incapable of producing the symmetrical and curiously-coloured flowers they are destined shortly to bear. Of late years, great attention has been paid to the cultivation of exotic Orchideous plants; and by imitating, as far as possible, their natural condition, great success has been already attained. An Orchideous house is now a common adjunct to the conservatory in the gardens of the wealthy, where, if it be well managed, some one or other of these curious air plants, as they have been called, may be seen in bloom at all seasons of the year, some clinging to broken potsherds, some to logs of wood, some to the outer fibre of the cocoa-nut, or simply suspended by wires from the roof of the house. It is somewhat remarkable that endless as are the varieties of form which the flowers of this tribe assume, their properties vary but little. They furnish few, if any, medicines of importance; to the useful arts they contribute only a kind of cement or glue, which is recommended by no particular excellence; a nutritious substance called Salep is prepared from the roots of *Orchis máscula* and other species, but this is not extensively used; and though the flowers of many species are very fragrant, no perfume is ever extracted from them. With the exception of Vanilla, the dried fruit of *Vanilla aromática*, which is much used in flavouring chocolate and other sweetmeats, no plant in the Order can be said to be extensively used, either in the arts or sciences. Lindley conjectures the number of species to amount to 3000.

The characters by which the families of this Order are distinguished are, owing to the curious structure of the flowers comprised in it, so peculiar that they require to be attentively studied by reference to fresh specimens before any description of them can be understood. It has been thought necessary, therefore, in the case of the Orchideous Tribe, to depart from the method pursued in the other parts of this work, and instead of perplexing the student with a systematic detail of generic characters, to describe such species as are of common occurrence, attention being paid only to their more obvious characters. The student will thus be enabled to ascertain the names of most, if not all, of the species which are likely to excite his attention. He may then examine them with accuracy, and when he has made himself acquainted with their structure and peculiarities, he will be in a position to compare whatever new species may chance to fall in his way with the descriptions given in works of higher pretension.

The first which is likely to be presented to his notice is *Orchis máscula* (Early purple Orchis), a succulent plant about a foot high, flowering in May and June, and abounding in woods and pastures wherever the Wild Hyacinth flourishes. The root consists of two roundish solid tubers; the *leaves* are of a liliaceous texture, stained with dark purple spots, oblong and clasping the stem; the *stem* is solitary, and bears an erect cluster of purple *flowers*, mottled with lighter and darker shades; each flower rises from a somewhat twisted *ovary*, and has a long *spur*, which turns upwards. The colour of the flower, associated as it often is with Cowslips and Wild Hyacinths, is rich and beautiful; but the odour is strong and offensive, especially in the evening.

Orchis Mório (Green-winged Meadow Orchis) comes



ORCHIS MASCULA (*Early purple Orchis*).

into flower about the same time with the last, and resembles it in habit. It is, however, a shorter plant, and bears fewer flowers in a cluster ; it is best distinguished by the two lateral *sepals*, which are strongly marked with parallel green veins, and bent upwards so as to form a kind of hood over the column. It grows in meadows, and is often very abundant.

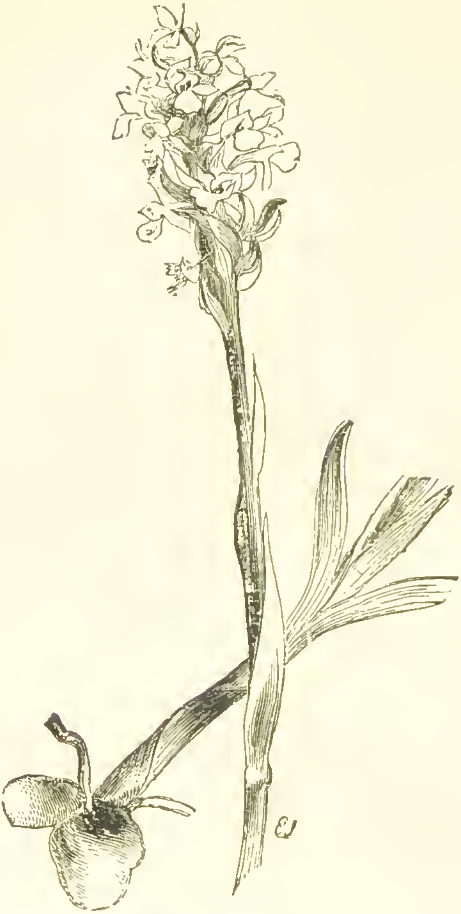
Orchis pyramidális (Pyramidal Orchis) bears at the summit of a somewhat slender stem a dense cluster, broad at the base and tapering to a point, of small deep rose-coloured *flowers*, which are remarkable for the length and slenderness of the spur. It usually grows on chalk or limestone, and flowers in July.

Orchis maculáta (Spotted Orchis) may be distinguished from either of the preceding by its root, which consists of two flattened tubers, divided at the extremity into several finger-like lobes. Its *leaves* are spotted like those of *O. máscula*, and its *flowers* are light purple, curiously marked with dark lines and spots. It grows abundantly on heaths and commons, flowering in June and July.

Orchis latifólia (Marsh Orchis) is a taller plant than the last, but has, like it, palmated roots ; the *leaves* are remarkably erect ; *flowers* rose-coloured or purple ; and the *bracts*, which taper to a fine point, are longer than the flowers. It grows abundantly in marshes and wet pastures, and blossoms in June and July. All the above species, especially *O. Mório*, occasionally bear white flowers.

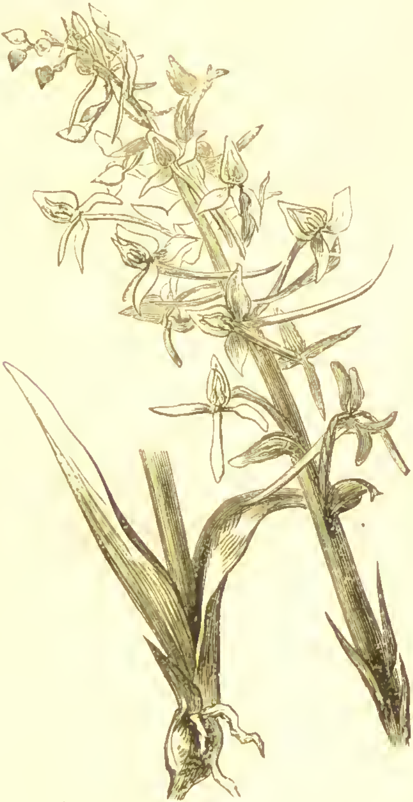
Gymnadénia conópsea (Sweet-scented Orchis) somewhat resembles *Orchis maculáta ;* the *flowers* are rose-purple, but not spotted, and very fragrant ; the *spur* is very slender, and twice as long as the ovary. It grows in dry, hilly, or mountainous pastures, and flowers in June and July.

Habenaria bifolia (Butterfly Orchis) is a singular plant, but not appropriately named, for the resemblance which its flowers bear to a butterfly is very slight. It bears



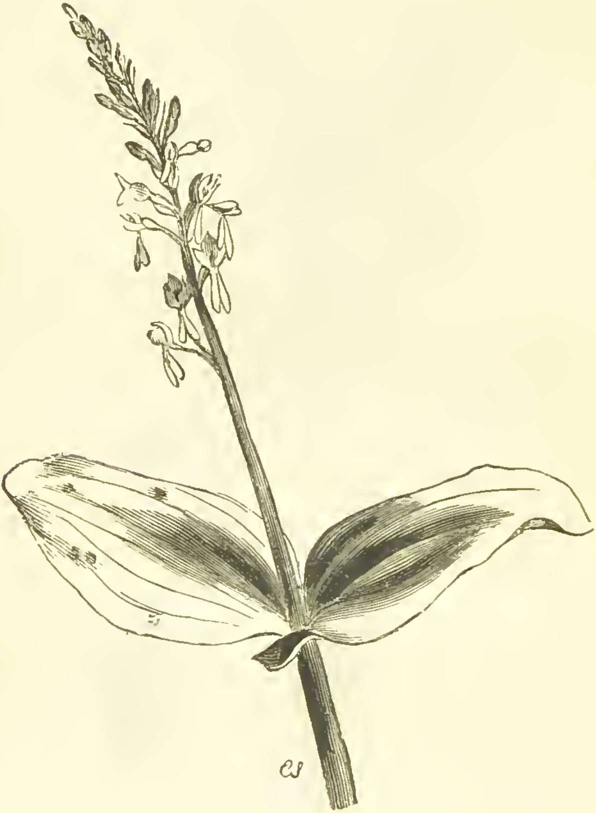
GYMNADÉNIA CONÓPSEA (*Sweet-scented Orchis*).

two broad *leaves* immediately above the root; the *stem* is slender and angular, about a foot high, and bears a loose cluster of greenish-white *flowers* which are remarkable for the length of the spur, and for the strap-shaped *lower lip* of the *corolla*. It grows on heaths and the borders of woods, blooming in June. The flowers are fragrant in the evening. *H. víridis* (Green Habenaria) and *H. álbida* (Small White Habonaria) are small plants from 6 to 8 inches high, the former with green *flowers*, the latter with *flowers* which are white and fragrant.



HABENARIA BIFOLIA (*Butterfly Orchis*).

Lístera ováta (Twayblade) grows from 12 to 18 inches high, and is well marked by its bearing, about half way up its cylindrical stem, two opposite egg-shaped *leaves;* the *flowers* are small and green. It is not uncommon in woods and orchards, and flowers in June. *Lístera cordáta* is a much smaller plant, with two heart-shaped leaves. It occurs in mountainous districts, and flowers from June to August.



LÍSTERA OVATA (*Twayblade*).

Lístera Nidus-avis (Bird's-nest) is a pale reddish-brown plant, about a foot high, entirely destitute of *leaves*, the place of which is supplied by numerous sheathing, brown *scales.* The *root* consists of many short fleshy fibres, from the extremities of which the young plants are produced. It is found sparingly in shady woods, flowering in June.

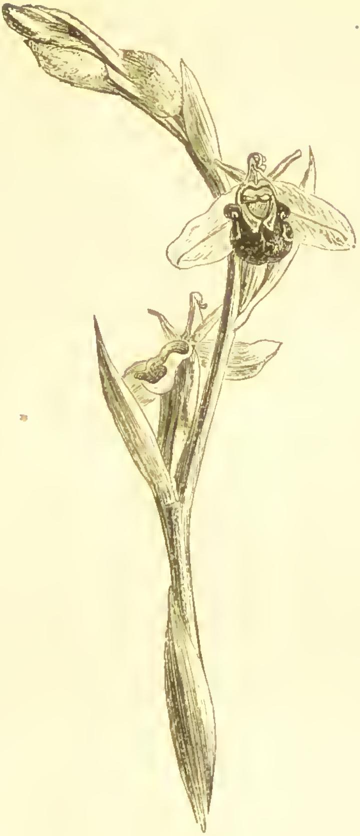
NEOTTIA SPIRÁLIS (*Lady's Tresses*).

Neottia spirális (Lady's Tresses) is a curious little plant, from 4 to 6 inches high, with tuberous *roots* and a spike of small white *flowers*, which are arranged in a single row, and in a spiral manner, in some specimens from left to right, in others from right to left, round the upper portion of the stalk. The flowers are fragrant in the evening. The *leaves* form a tuft just above the crown of the root, and wither before the flowers begin to expand. These are succeeded by a tuft of new leaves, which arise from the base of the old stem; the latter are remarkably tenacious of life, continuing to unfold even while subjected to the pressure made on the blotting-paper during the process of drying. Not uncommon in dry pastures, flowering in September and October.

Ophrys apífera (Bee Orchis).—The distinctive character of the flowers of this curious plant is given in its name; and the same may be said of *O. muscífera* (Fly Orchis); both species occur in considerable abundance in many of the limestone and chalk districts. No one who has heard that plants exist bearing these names, can doubt their identity, should they fall in his way. The former of these flowers in June and July, the latter in May and June. The Spider Orchises, *Ophrys arachnítes* and *O. aranífera*, are of rare occurrence.

Epipactis grandiflóra (White Helleborine) grows from 1 foot to 2 feet high, bearing several rather broad *leaves* on the stem, and a loose spike of large pure white *flowers.* It grows in woods, being almost if not entirely confined to a chalky soil, and flowers in June. *Epipactis latifolia* (Broad-leaved Helleborine) and *E. palustris* (Marsh Helleborine) are of similar habit; the former bearing a long loose spike of greenish-purple *flowers*; the latter a spike of *flowers* variegated with purplish-green, white and rose-coloured.

The above description includes all the Orchideous plants which are of common occurrence. The rarer species indigenous to Britain are:—*Orchis ustuláta* (Dwarf dark-winged Orchis), *O. fusca* (Great brown-winged Orchis), *O. militaris* (Military Orchis), *O. tephrosánthos* (Monkey Orchis), and *O. hircína* (Lizard Orchis).—These grow only in chalk districts.



OPHRYS APÍFERA (*Bee Orchis*).

Góodyera repens (Creeping Goodyera) is a small plant with creeping roots, growing in fir woods in Scotland; *Corallorhíza innáta* (Coral-root) is well marked by its curiously-toothed *roots*, which in figure resemble branched coral; it occurs in marshy woods in Scotland. *Áceras anthropóphora* (Man Orchis) bears a long, loose spike of greenish yellow *flowers;* it grows in dry chalky places. *Malaxis paludósa* (Bog Orchis), the smallest British Orchideous plant, 2—4 inches high, grows in spongy bogs, and bears a spike of minute green *flowers. Líparis Loesélii* (Two-leaved Liparis) is confined to the eastern counties, where it is rarely found in spongy bogs; it bears a spike of 6—12 yellowish *flowers* on a triangular stalk. *Cypripédium Calcéolus* (Lady's Slipper), distinguished by its large inflated lip, occurs but rarely in the woods of the north of England, and is pronounced by Sir W. J. Hooker "one of the most beautiful and interesting of our native plants."

ORD. LXXXIV.—IRIDACEÆ.—IRIS TRIBE.

Perianth 6-cleft; *stamens* 3, rising from the base of the sepals; *ovary* inferior, 3-celled; *style* 1; *stigmas* 3, often petal-like; *capsule* 3-celled, 3-valved; *seeds* numerous. Principally herbaceous plants with tuberous or fibrous roots, long, and often sword-shaped, sheathing leaves, and showy flowers, which seldom last a long time. Chiefly natives of warm and temperate regions, and most abundant at the Cape of Good Hope, where, at the time of its discovery by the Portuguese, the natives mainly supported themselves on the roots of the plants of this tribe, together with such shell-fish as were left on shore by the receding tide. *Iris, Crocus, Ixia,* and *Gladíolus* are favourite garden flowers; *Iris Pseud-ácorus* (Yellow Iris, or Flag) is one of our most showy marsh plants. Few species are used in the arts or sciences; the roots of *Iris Florentína* afford Orris-root, which, when dried, has a perfume resembling that of Violets, and is used as an ingredient in tooth-powder; the dried stigmas of *Crocus satívus,* were anciently much prized as a dye, and are still employed for the same purpose, as well as in medicine and cookery; and the roots of a few species are used by barbarous nations as an occasional article of food.

1. IRIS.—*Perianth* with the 3 outer divisions longer, and reflexed; *stigmas* 3, petal-like, covering the stamens. (Name from Iris, the rainbow, from the beautiful colouring of the flowers.)

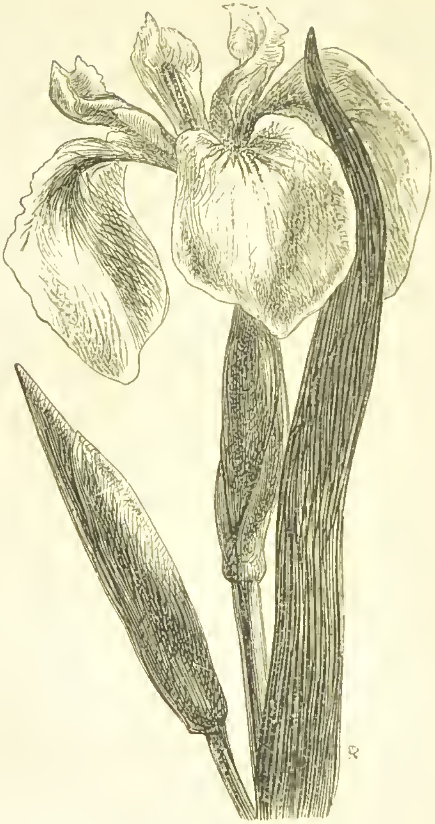
2. TRICHONÉMA.—*Perianth* in 6 equal spreading divisions; *tube* shorter than the *limb; stigma* deeply 3-cleft, its lobes 2-cleft, slender. (Name from the Greek *thrix*, a hair, and *néma*, a thread or filament.)

3. CROCUS.—*Perianth* in 6 equal, nearly erect divisions; *tube* very long; *stigma* 3-cleft, its lobes inversely wedge-shaped. (Name from the Greek *crocos*, saffron, and that from *crocé*, a thread.)

1. IRIS (*Flower-de-luce*).

1. *I. Pseud-ácorus* (Yellow Iris, Flag, Corn Flag).—*Leaves* sword-shaped; *perianth* not fringed, its inner divisions smaller than the stigmas.—Marshes and banks of rivers, common. A stout aquatic plant with creeping, acrid roots, sword-shaped leaves 2—3 feet long, and large, handsome yellow flowers. The root yields a black dye, and the roasted seeds, it is said, may be used as a substitute for coffee.—Fl. June, July. Perennial.

2. *I. fœtidíssima* (Stinking Iris).—*Leaves* sword-shaped; *perianth* not fringed, its inner divisions about as large as the stigmas; *stem* slightly flattened.—Woods and hedges in the west and south-west of England, not uncommon. Resembling the last in habit, but smaller. The flowers are of a dull leaden hue, and the leaves so acrid as to leave a burning taste in the mouth, or even to loosen the teeth. The whole plant, when bruised, emits a disagreeable odour. Sir. W. J. Hooker states that "in Devonshire it is so frequent, that one can hardly avoid walking among it when herbalizing, and being annoyed by the smell." This, however, is an exaggeration. The berry-like seeds, which are of a



IRIS PSEUD-ACORUS (*Yellow Iris, Flag, Corn Flag*).

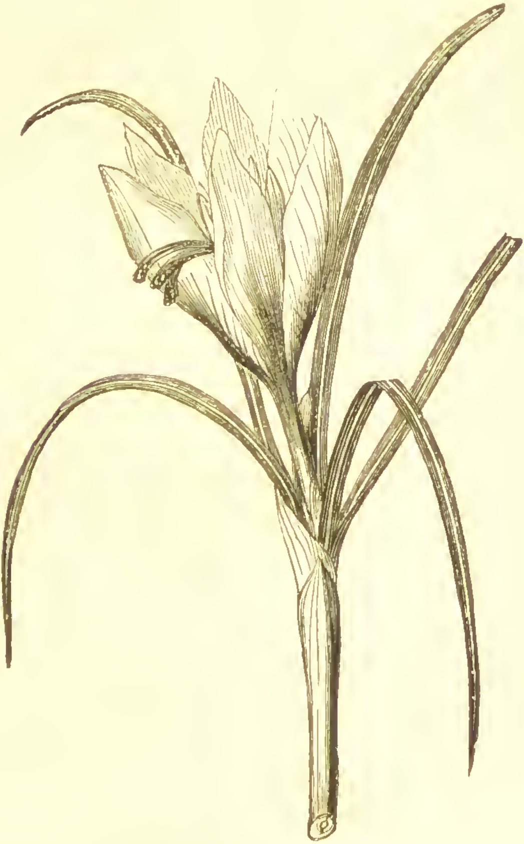
beautiful scarlet colour, remain attached to the plant all through the winter.—Fl. June—August. Perennial.

* Many species of Iris are cultivated for their beauty, some of which are occasionally found apparently wild, in the neighbourhood of gardens.

2. Trichonéma.

1. *T. Columnæ* (Columna's Trichonéma).—The only British species.—A small bulbous plant, 3—4 inches

high, with very narrow *leaves*, and solitary purplish *flowers* tinged with yellow, partaking the characters of the Iris and Crocus. It grows only on a sandy pasture called the Warren, at Dawlish, Devon.—Fl. March, April. Perennial.



CROCUS SATIVUS (*Saffron Crocus*).

3. Crocus.

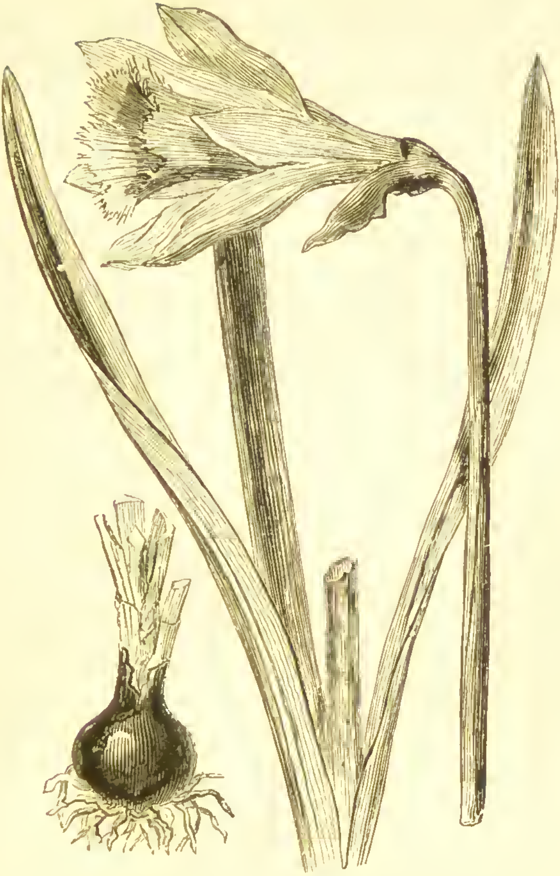
1. *C. sativus* (Saffron Crocus).—*Leaves* appearing after the flowers, linear ; *flower-stalks* enveloped with a double sheath ; *stigma* long and drooping.—Said to be naturalized at Saffron-Walden, in Essex, where it is largely cultivated for the sake of the *saffron* afforded by its dried stigmas, the only part of the plant which is used. The flowers are purple.—Fl. September. Perennial.

* Several other species of *Crocus* are sometimes found in the neighbourhood of gardens. In some of these the leaves and flowers appear together in spring. The seed-vessels, in their early stage, are concealed, at the base of the long tube, beneath the ground ; but when the flowers are withered, the stalk rises and exposes them to the action of the air and sun, to be ripened.

Ord. LXXXV.—AMARYLLIDACEÆ.—Amaryllis Tribe.

Perianth of 3 coloured *sepals* and 3 *petals ; stamens* 6, arising from the sepals and petals, sometimes united by the base of their filaments ; *ovary* inferior, 3-celled ; *style* 1 ; *stigma* 3-lobed ; *fruit* a many-seeded capsule or a 1—3-seeded berry.—An extensive tribe, principally composed of herbaceous plants with bulbous roots, sword-shaped leaves, and showy flowers, which are distinguished from the true lilies by their *inferior* ovary ; that organ in the *Lily Tribe* being *superior*, and enclosed within the corolla. Large and beautiful species belonging to this Order are found in abundance in Brazil, the East and West Indies, and especially the Cape of Good Hope. In the temperate regions they are less common, and by no means so showy. In Great Britain, it is doubtful whether a single species is indigenous, though the number of varieties cultivated in gardens, both in conservatories and in the open air, is very great. The bulbous roots of many plants belonging to the Amaryllis Tribe are poisonous ; some, it is said, to such a degree that deleterious properties are communicated to weapons dipped in their juice. The roots of the Snowdrop and Daffodil are emetic, and the flowers of the last (*Narcissus Pseudo-Narcissus*) are a dangerous poison. The roots of some species, however, are nutritious, affording a kind of arrowroot. From the juice of a kind of *Agávé* (*A. Americana*) a fermented liquor is made, which, under the name of "pulque," is in Mexico a common beverage. This plant, called by the Mexicans "maguey," is cultivated over an extent of country embracing 50,000 square miles. In the city of Mexico alone the consumption of pulque amounts to the enormous quantity of eleven millions of gallons, and a considerable revenue from its sale is derived by government. The plant attains maturity in a period varying from eight to fourteen years, when it flowers ; and it is during the stage of flowering alone that the juice is extracted. The central stem, which encloses the flower-bud, is then cut off near the bottom, and a cavity or basin is discovered, over which the leaves are drawn close, and tied. Into this reservoir the juice distils, which otherwise would have risen to nourish and support the flower. It is removed three or four times during the 24 hours, yielding a quantity of liquor varying from a quart to a gallon and a half. The juice is extracted by means of a syphon made of a species of gourd, and deposited in bowls. It is then placed in earthen jars, and a little old pulque is added, when it soon ferments and is immediately ready for use. The fermentation occupies two or three days, and when it ceases it is in fine order. Old pulque has an unpleasant odour, which has been compared to that of putrid meat ; but when fresh it is brisk and sparkling. In time even Europeans prefer it to any other liquor. This Agave is popularly known in England by the name of American

Aloe. It grows but slowly in this climate, and, as it rarely attains perfection, is believed by many persons to flower once in a hundred years. A fine specimen which flowered at Clowance, Cornwall, in September, 1837, is thus described:—"A sturdy stem 17½ inches in diameter rises from a *chevaux de frise* of spiked leaves to the height of 14 feet without a branch; but copiously beset with leaves of the same character, which gradually diminish in size, and are continued to the very top, till from being four or five feet long, they become mere bracts, measuring not as many lines. The lower branches are not, as they are often represented in engravings, shorter than those above them, but extend to the length of several feet, describing a graceful curve. A short distance above, but not so close as to appear crowded, or so exactly opposite as to present a formal appearance, another branch leaves the main stalk, a very little shorter than the lower one, and is succeeded by others, in all thirty-four, the last being twenty-five feet from the ground. Each of these bears at its extremity a mass of green flowers, the summits of which form nearly a plane surface. The number of flowers on the five lower branches amounts to 911, so that the whole, including those on the summit of the stem, must be computed, on a fair average, at no less than 5,000 perfect flowers. The quantity of honey which they contained was very great, and as it was constantly dropping, moistened the ground beneath. The plant, exhausted by the unusual effort, for which it had been for many years preparing, died the same year." The roots and leaves of the species of *Agávé* contain woody fibre (*pita thread*), useful for various purposes; this is separated by bruising and steeping in water, and afterwards beating. The Mexicans also make their paper of the fibres of Agave leaves laid in layers. The expressed juice of the leaves is also stated to be useful as a substitute for soap.



NARCISSUS PSEUDO-NARCISSUS (*Common Daffodil, Lent Lily*).

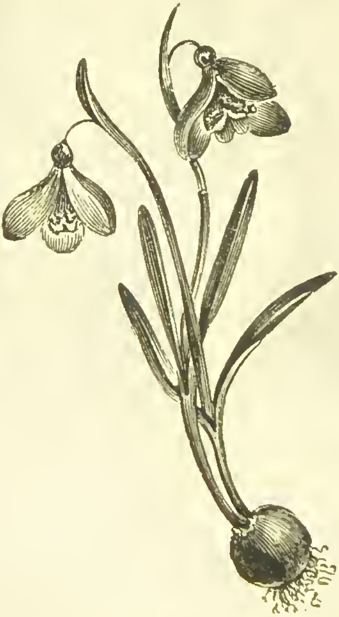
1. NARCISSUS (Daffodil).—*Perianth* tubular at the base, terminating in a bell-shaped *crown* or *nectary*, which has 6 equal *sepals* and *petals* at its base. (Named after *Narcissus*, a fabulous youth, said to have been changed into a flower.)

2. GALANTHUS (Snowdrop).—*Perianth* bell-shaped; *sepals* 3 (white), spreading; *petals* 3, erect, notched. (Name in Greek signifying "milk-flower.")

3. LEUCÓJUM (Snow-flake).—*Perianth* bell-shaped, of 6 equal *sepals* and *petals*, which are thickened at the point. (Name in Greek signifying "a white violet.")

1. NARCISSUS (*Daffodil*).

1. *N. Pseudo-Narcissus* (Common Daffodil, Lent Lily).—*Flower-stalk* hollow, 2-edged, bearing near its summit a membranous sheath and a single flower; *nectary* notched and curled at the margin, as long as the sepals and petals.—Woods and orchards, common. A favourite flower with country children, owing to its large size and showy, yellow colour; but its smell is unpleasant, and



GALANTHUS NIVALIS (*Snowdrop*).

the whole plant possesses poisonous properties.—Fl. March, April. Perennial.

* Several other species of *Narcissus* are occasionally found near houses, but they are invariably the outcast of gardens.

2. Galanthus (*Snowdrop*).

1. *G. nivális* (Snowdrop).—Too well known to need any description. The Snowdrop, *G. plicatus*, recently

LEUCOJUM ÆSTIVUM (*Summer Snowflake*).

introduced from the Crimea, differs mainly from the common species in having broader, plaited leaves, and somewhat larger flowers.—Fl. January—March. Perennial.

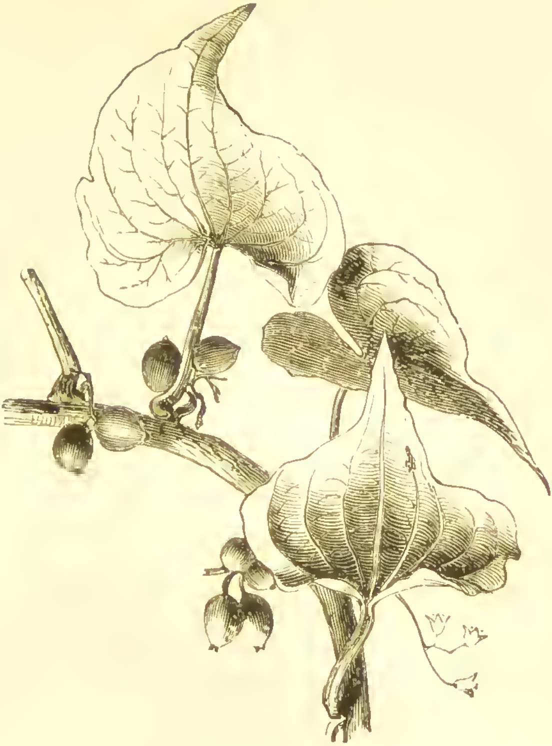
3. Leucójum (*Snowflake*).

1. *L. æstívum* (Summer Snowflake).—A doubtful native, found occasionally in moist meadows in many parts of England.—A bulbous plant about 2 feet high, with narrow, keeled *leaves*, and 2-edged flower-stalks bearing each an umbel of rather large white *flowers*, the *sepals* and *petals* of which are tipped with green. It is a common garden plant.—Fl. May. Perennial.

Ord. LXXXVI.—DIOSCOREACEÆ.—Yam Tribe.

Stamens and *pistils* on different plants (*diœcious*); *perianth* 6-cleft; *stamens* 6, arising from the base of the perianth; *ovary* inferior, 3-celled; *style* deeply 3-cleft; *fruit* a dry, flat capsule, or (in *Tamus*, the only British species) a berry.—Twining shrubs or herbs, approaching in habit some of the Dicotyledonous Orders, the leaves being decidedly stalked, and having netted veins; the flowers are small, with 1—3 bracts each, and grow in spikes. The Order is a small one, and is, with the exception of *Tamus* (Black Bryony), confined to tropical regions. Dioscorea, the plant from which the Order takes its name, has large tuberous roots, which, under the name of "Yams," form as important an article of food in tropical countries, as the Potato in temperate climates. When growing it requires a support, like the Hop. There are several varieties; the best are white and mealy, but some are yellow and watery, with a slightly bitter taste.

1. Tamus (Black Bryony).—Characters described above. (Name, the Latin name of the plant.)



TAMUS COMMÚNIS (*Black Bryony*).

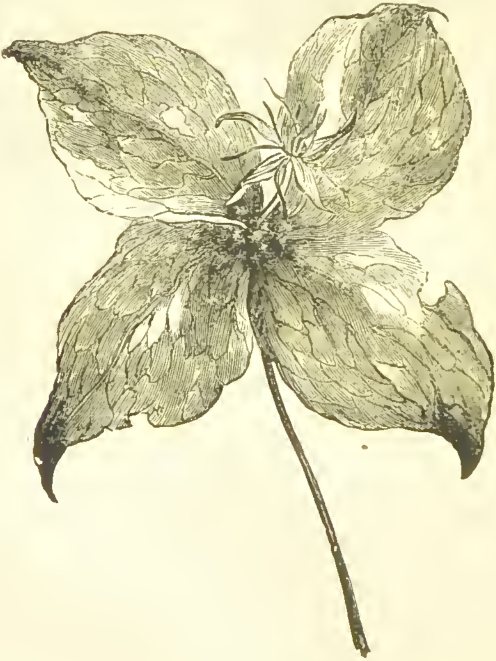
1. Tamus (*Black Bryony*).

1. *T. commúnis* (Black Bryony).—The only British species.—*Root* a large, solid *tuber*, black externally; *stem* slender, twining among bushes to the length of many feet, and clothed with numerous varnished, heart-shaped *leaves*, and clusters of small, green *flowers*, which are succeeded by elliptical scarlet *berries*. The leaves are reticulated with veins somewhat like those of Dicotyledonous plants, but they are not jointed to the stem. Late in autumn they turn dark purple or bright yellow,

when, assisted by the scarlet berries, they make a very showy appearance. In winter they die down to the ground.—Fl. May—July. Perennial.

Ord. LXXXVII.—TRILLIACEÆ.—Herb-Paris Tribe.

Sepals and *petals* 6—8, coloured or green; *stamens* 6—10; *anthers* very long, their cells, one on each side of the filament; *ovary* superior, with 3—5 cells, and as many *styles*; *fruit* a 3—5-celled berry; *seeds* numerous.—A small Order, containing about thirty herbaceous plants with tuberous roots, whorled, netted leaves, and large solitary terminal flowers. They grow in the woods of temperate climates, and, like the plants of the last



PARIS QUADRIFOLIA (*Four-leaved Herb-Paris, True-Love Knot*).

Order, bear some resemblance to Dicotyledonous plants. The structure of the seed, however, and the fact that the leaves are not jointed to the stem, fix them in the class of Endogenous or Monocotyledonous plants. Their properties are acrid and narcotic.

1. PÁRIS (Herb-Paris).—*Sepals* and *petals* 8, very narrow; *stamens* 8—10. (Name from the Latin *par*, *paris*, equal, on account of the unvarying number of the leaves.)

1. PÁRIS (*Herb-Paris*).

1. *P. quadrifolia* (Four-leaved Herb-Paris, True-Love-Knot).—The only British species; growing in damp woods, not common. A singular plant, with a *stem* about a foot high, bearing near its *summit* four large, pointed *leaves*, from the centre of which rises a solitary large, green *flower*.—Fl. May. Perennial.

ORD. LXXXVIII.—LILIACEÆ.—LILY TRIBE.

Calyx 0; *corolla* of 6 petals, distinct, or united into a tube; *stamens* 6, inserted into the petals, opening inwards; *ovary* superior, not united with the petals, 3-celled, many-seeded; *style* 1; *stigma* simple or 3-lobed; *capsule* 3-celled, 3-valved, oblong; *seeds* numerous, flattened horizontally.—An extensive family of plants, of which the majority are herbaceous, with bulbous roots, and showy flowers; some, however, attain the dimensions of shrubs, or even trees, in which case they resemble the Palms rather than exogenous trees, the trunk being destitute of true bark and pith, and the leaves being never jointed to the stem. Butcher's Broom (*Ruscus*) is the only British species which assumes a shrubby character; *Asparagus* is a branching herbaceous plant, with creeping roots, scaly stems, and bristle-like leaves; *Convallaria* (Lily of the Valley) has also creeping roots. These three produce a berry-like fruit. All other British species have bulbous roots, and the fruit when ripe is a dry capsule. Plants of the Lily tribe are most abundant in temperate climates, but attain their greatest magnitude in the tropics. *Dracæna Draco* (Dragon's Blood) is said to grow to the height of 70 feet, with a stem upwards of 40 feet in circumference. In the Canaries one is in existence which is known to have been an ancient tree in the year 1406. The leaves of many species contain a tough fibre, which is used as a substitute for hemp or flax. Among these the most remarkable is *Phormium tenax* (New Zealand Flax). The genus *Allium* (Onion, Garlic, and Leek) supplied food to the early inhabitants of Egypt, and had divine honours paid to it. In Kamtschatka, Tartary, and the Sandwich Islands, various species are cultivated for the same purpose. The bud and tender part of the stem of the Grass-tree, a native of Tasmania, is said to be nutritious, and of an agreeable flavour, and in our own country the young shoots of Asparagus rank among the most delicate of our esculent vegetables. In medicine many species are of great value, among which, aloes, the condensed juice of *Alóë vulgáris*, &c., and squills, an extract of *Scilla marítima*, are well known. As ornamental plants the beauty of the Lily Tribe has been for ages proverbial; *Lilium Chalcedónicum*, which covers the plains of Syria with its scarlet flowers, is said to have been the plant to which our Blessed Saviour alluded in His Sermon on the Mount, under the title of "the lilies of the field." The innumerable varieties of Hyacinth are derived from an Eastern plant, *Hyacinthus Orientális*; and the Tulip (*Túlipa*) was long the most highly prized among florists' flowers, and furnished in Holland a subject for the most absurd speculation.

Group I. ASPARAGEÆ.—*The Asparagus Group.*

Roots never bulbous; fruit, a berry.

1. ASPÁRAGUS.—*Corolla* deeply 6-cleft, bell-shaped; *stamens* 6, distinct; *stigmas* 3, bent back. (Name, the Greek name of the plant.)

2. RUSCUS (Butcher's Broom).—*Corolla* deeply 6-cleft; *stamens* and *pistils* on different plants (*diœcious*); *stamens* connected at the base; *style* surrounded by a nectary. (Name, "anciently *bruscus*, from *bruskelen*; in Celtic, box-holly."—*Sir W. J. Hooker.*)

3. CONVALLARIA (Lily of the Valley).—*Corolla* 6-cleft, bell-shaped, soon falling off, not jointed with the pedicel; *stamens* 6, distinct; *stigma* 1. (Name from the Latin *convallis*, a valley, the usual locality of this family.)

4. POLYGÓNATUM (Solomon's Seal).—*Corolla* 6-cleft, elongated, persistent, jointed with the pedicel; *stamens* 6, distinct; *stigma* 1. (Name in Greek denoting "many angled," from the character of the stem.)

Group II. SCILLEÆ.—*The Squill Group.*

Root bulbous; fruit a capsule; stalk leafless.

5. ÁGRAPHIS (Hyacinth).—*Corolla* deeply 6-cleft, tubular, bell-shaped; *lobes* of the *corolla* reflexed at the extremity. (Name, a Greek compound, which signifies "unwritten," denoting that the petals do not bear marks resembling written characters, as is the case with some species of Hyacinthus, in which genus this plant was formerly placed.)

6. SCILLA (Squill).—*Corolla* of 6 spreading petals; *flowers* blue or purple, in a cluster or corymb, not enclosed in a sheath, falling off as the seed ripens. (Name, the Latin name of the plant.)

7. ORNITHÓGALUM (Star of Bethlehem).—Like *Scilla*, except that the petals are white, and do not fall off. (Name from the Greek *ornis*, a bird, and *gala*, milk. This plant is supposed by Linnæus to be the "dove's dung" mentioned in 2 Kings vi. 25.)

8. ALLIUM (Garlic).—*Corolla* of 6 spreading petals; *flowers* in an umbel, at the base of which is a sheath of 1 or 2 leaves. (Name, the Latin name of the plant.)

Group III. TULIPEÆ.—*The Tulip Group.*

Like the Squill group, except that the flower-stalk is leafy.

9. GÁGEA.—*Flowers* in an umbel or corymb; *petals* 6, without a nectary; *anthers* erect, attached to the filaments by their bases; *style* conspicuous. (Named in honour of Sir Thomas Gage.)

10. TÚLIPA (Tulip).—*Flowers* solitary, rarely 2 on a stem; *petals* and *anthers* as in Gágea; *style* 0. (Name from *toliban*, the Persian name for a turban.)

ASPÁRAGUS OFFICINÁLIS (*Common Asparagus*).

11. FRITILLARIA (Fritillary).—*Flowers* solitary; *petals* 6, with a nectary at the base of each; *anthers* attached above their bases; *style* 3-cleft at the summit. (Name from the Latin *fritillus*, a dice-box, the common accompaniment of a *chequer-board*, which the marking of the flower resembles.)

* Besides the above, several other genera are described by British botanists, of which *Anthéricum* or *Lloydia* (Spider-wort) is the only real native; it is very rare, growing only near the summit of Snowdon and other mountains in Wales.

1. ASPARAGUS.

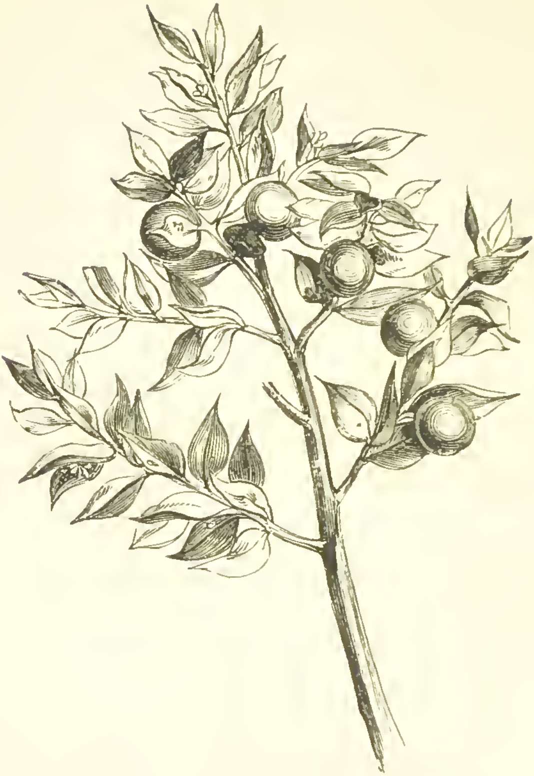
1. *A. officinális* (Common Asparagus).—The only British species, occurring sparingly on several parts of the sea-coast, especially near the Lizard Point, Cornwall; it differs only in size from the cultivated plant. See "A Week at the Lizard."—Fl. July, August. Perennial.

2. RUSCUS (*Butcher's Broom*).

1. *R. aculeátus* (Butcher's Broom, Knee Holly).—The only British species, and only British shrub of Endogenous growth.—Waste and bushy places, not uncommon, especially in the south of England. A low shrub 3—4 feet high, with erect green *stems*, which are branched and plentifully furnished with very rigid *leaves* terminating each in a sharp spine. The *flowers* are minute, greenish-white, and grow singly from the centres of the leaves; the *berries* are as large as marbles, round, and of a brilliant scarlet colour.—Fl. April, May Shrub.

3. CONVALLARIA (*Lily of the Valley*).

1. *C. majális* (Lily of the Valley).—*Leaves* all from the root; *flowers* drooping, in a long, one-sided cluster. —Woods, in a light soil, not frequent. A common,



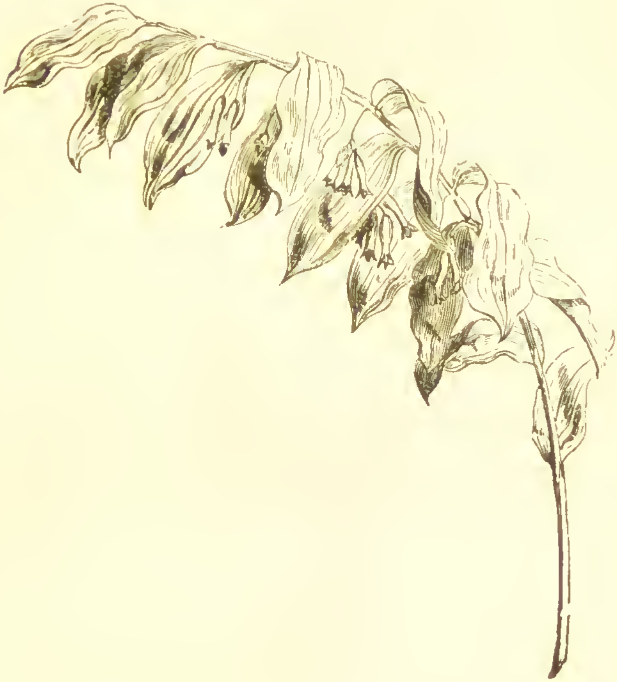
RUSCUS ACULEÁTUS (*Butcher's Broom, Knee Holly*).

and universally admired garden plant, equally prized for its globular, pure white flowers, and for its delicious perfume.—Fl. May. Perennial.

4. POLYGONÁTUM (*Solomon's Seal*).

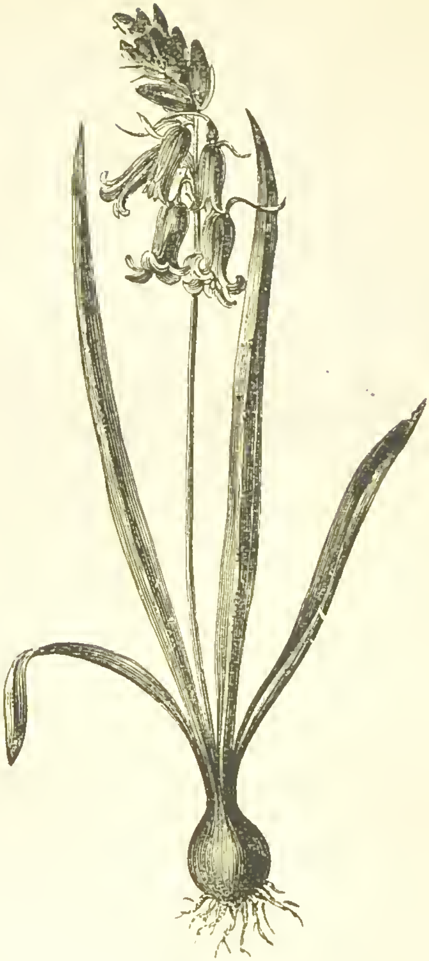
1. *P. multiflórum* (Solomon's Seal).—*Stem* roundish, bearing numerous elliptical *leaves*, which are all turned one way, and opposite them small clusters of drooping *flowers*, which are all turned the other way ; *filaments*

hairy.—Woods, in several parts of England and Scotland, but not frequent. A singular plant, 1—2 feet high, bearing numerous whitish flowers, with green tips, shaped like old-fashioned round seals.—Fl. June. Perennial.



POLYGONÁTUM MULTIFLÓRUM (*Solomon's Seal*).

* *P. officinálé* (Angular Solomon's Seal) differs from the last species in having an angular *stem*, mostly solitary *flowers*, and smooth *filaments*: *P. verticillátum* bears its leaves 3—4 in a whorl. Both these species are rare.

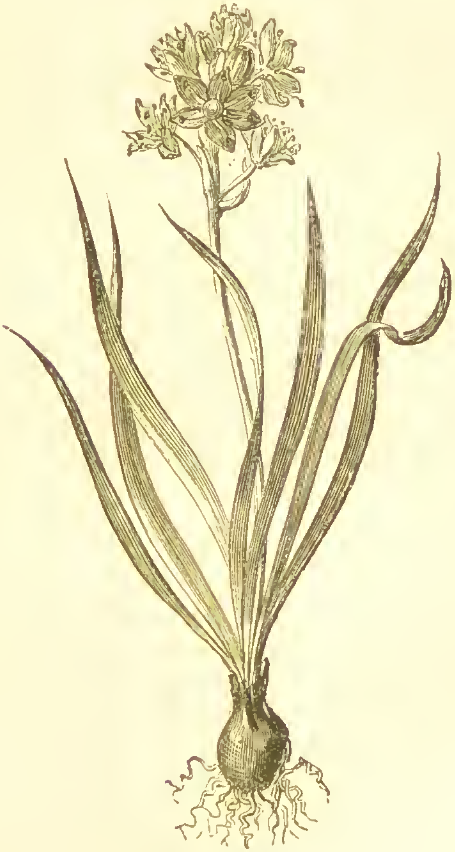


AGRAPHIS NUTANS (*Wild Hyacinth, Blue-bell*).

5. Agraphis (*Hyacinth*).

1. *A. nutans* (Wild Hyacinth, Blue-bell).—The only British species. Too abundant and well known to need

any description. The name *Hyacinthus* was originally given to some species of Lily into which the youth Hyacinthus was fabled to have been changed by Apollo. The petals are marked with dark spots, arranged so as to resemble the Greek word AI, alas! The present species, however, having no such characters on its petals,



SCILLA VERNA (*Vernal Squill*).

was named *non-scriptus,* not written. It is sometimes, though incorrectly, called Hair-bell; the true Hair-bell being *Campánula rotundifolia.* Modern botanists have removed it from the genus *Hyacinthus* into that which it at present occupies.—Fl. May, June. Perennial.

6. SCILLA (*Squill*).

1. *S. verna* (Vernal Squill).—*Flowers* in a corymb; *bracts* narrow; *leaves* linear, appearing with the flowers. —Sea-coast in the west and north of England. A lovely little plant, 3—4 inches high, with *corymbs,* or flat clusters of blue, star-like *flowers.* The turfy slopes of the sea-coast of Cornwall are in many places as thickly studded with these pretty flowers as inland meadows are with Daisies. In a few weeks after flowering no part of the plant is visible but the dry capsules, containing black, shining seeds.—Fl. May. Perennial.

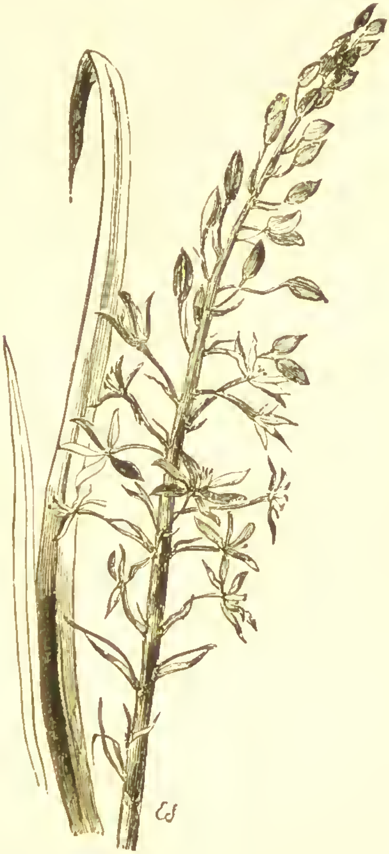
2. *S. autumnális* (Autumnal Squill).—*Flowers* in an erect cluster; *bracts* 0; *leaves* appearing after the flowers.—Dry pastures, especially near the sea, not common. About the same size as the last, but less beautiful. Flowers, purplish blue.—Fl. August—October. Perennial.

7. ORNITHÓGALUM (*Star of Bethlehem*).

1. *O. Pyrenáicum* (Spiked Star of Bethlehem).—*Flowers* in a long spiked cluster.—Woods, not common; very abundant in the neighbourhood of Bath, where the spikes of unexpanded flowers are often exposed for sale as a pot-herb. A bulbous plant, with long, narrow leaves, which wither very early in the season, and a leafless stalk about 2 feet high, bearing a long erect cluster of greenish-white flowers.—Fl. June, July.

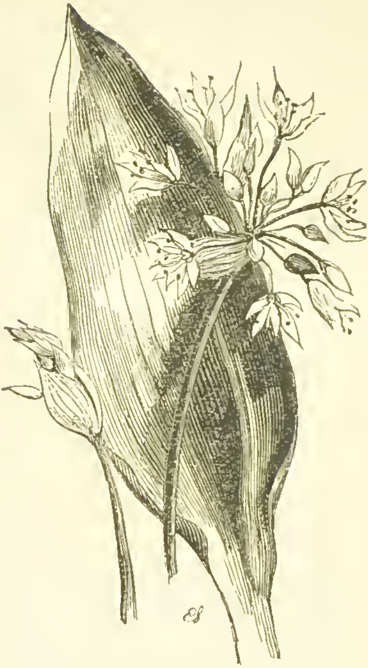
* *O. umbellátum* (Common Star of Bethlehem), though not an English plant, is not unfrequently found in the

neighbourhood of houses. It bears large, pure white *flowers,* which are green externally, and grow in *umbels,*



ORNITHÓGALUM PYRENÁICUM (*Spiked Star of Bethlehem*).

or, rather, *corymbs,* opening only in sunny weather. It is a common garden plant.



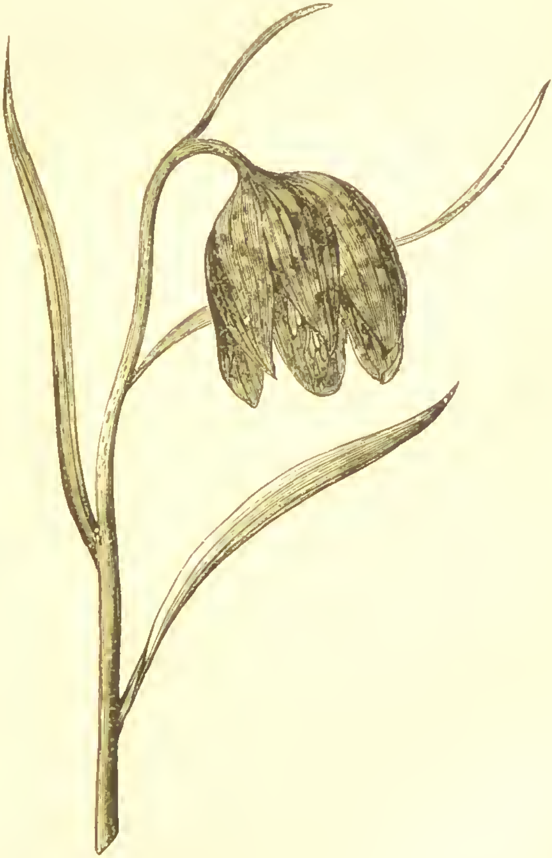
ALLIUM URSÍNUM (*Broad-leaved Garlic, Ramsons*).

8. ALLIUM (*Garlic*).

1. *A. ursínum* (Broad-leaved Garlic, Ramsons).—*Leaves* broad and flat; *flower-stalk* triangular; *flower* in a flat umbel.—Woods and thickets, common. The leaves of this plant are scarcely to be distinguished from those of the Lily of the Valley; the flowers are white and pretty, but the stench of the whole plant is intolerable.—Fl. May, June. Perennial.

* Seven other species of Garlic are described by British botanists, but none of them are so common as

the last. *A. Schœnóprasum* (Chives) is a pretty plant, with dense heads of bright purple flowers. In a wild state its foliage is scanty, but under cultivation becomes very abundant, in which state it is a favourite cottage pot-herb. Several other species are remarkable for bearing small bulbs among the flowers.



FRITILLARIA MELEÁGRIS (*Fritillary, Snake's-head*).

9. GÁGEA.

1. *G. lútea* (Yellow Gágea).—The only British species.—Woods and pastures, rare. A bulbous plant 6—8 inches high, with long narrow *leaves*, and umbels of yellow *flowers.*—Fl. March—May. Perennial.

10. TÚLIPA (*Tulip*).

1. *T. sylvestris* (Wild Tulip).—The only British species.—Chalk-pits, rare. A bulbous plant with very narrow *leaves*, and a solitary, yellow, drooping *flower*, which is fragrant, and much smaller than the garden Tulip.—Fl. April. Perennial.

11. FRITILLARIA (*Fritillary*).

1. *F. Meleágris* (Fritillary, Snake's-head).—The only British species.—Meadows and pastures in the east and south of England, not common. A bulbous plant, with very narrow *leaves*, and a solitary drooping *flower*, shaped like a Tulip, and curiously chequered with pink and dull purple.—Fl. April. Perennial.

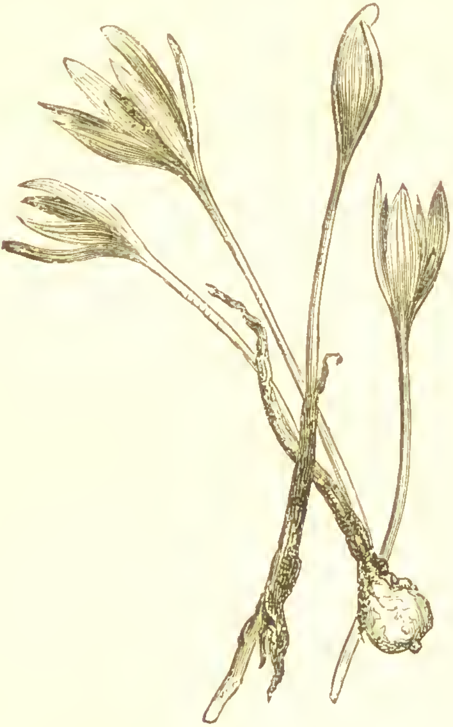
ORD. LXXXIX.—MELANTHACEÆ.

MEADOW-SAFFRON TRIBE.

Calyx and *corolla* alike, coloured, in 6 pieces, or united below into a tube; *stamens* 6; *anthers* turned outwards; *ovary* 3-celled; *style* deeply 3-cleft; *capsule* divisible into 3 pieces; *seeds*, each contained in a membranous case.—A small tribe, containing some plants approaching the Lilies in habit, and others, the Crocuses, confined to no particular countries, but most frequent in the northern hemisphere. Many species possess acrid and poisonous properties, and are used to destroy vermin. *Cólchicum* (Meadow Saffron) is used as a specific for the gout, but it is considered a dangerous medicine.

1. Cólchicum (Meadow Saffron).—*Corolla* with a very long tube, rising from a sheath. (Name from Colchis, a country famous for medicinal herbs.)

2. Tofieldia (Scottish Asphodel).—*Corolla* of 6 petals; *flowers* each from a small 3-lobed sheath. (Name in honour of Mr. Tofield, an English botanist.)



colchicum autumnale (*Meadow Saffron*).

1. Cólchicum (*Meadow Saffron*).

1. *C. autumnálé* (Meadow Saffron).—The only British species.—Meadows, not general. A not unfrequent

garden plant, with large broad *leaves*, which wither away in summer and are succeeded by several light purple, or sometimes white flowers, resembling Crocuses in all respects except that they have 6 instead of 3 stamens. At the time of flowering the seed-vessels are concealed beneath the ground, where they remain until the following spring, when they rise above the surface and are ripened. When grown in gardens, the bulbs are often taken up when the leaves have withered, and placed in a window, where they will flower without earth or water.—Fl. September, October. Perennial.

2. Tofieldia (*Scottish Asphodel*).

1. *T. palustris* (Mountain Scottish Asphodel).—The only British species.—Boggy ground in the north. A small plant, 4—6 inches high, with tufts of narrow, sword-shaped *leaves*, and egg-shaped, almost stalkless spikes of small, yellowish *flowers*.—Fl. July, August. Perennial.

Ord. XC.—JUNCACEÆ.—Rush Tribe.

Calyx and *corolla* alike, of 6 usually chaffy pieces (sometimes coloured, as in Asphodel); *stamens* 6, inserted into the base of the petals and sepals, or sometimes 3, inserted into the sepals ; *anthers* turned inwards ; *ovary* superior ; *style* 1 ; *stigmas* 3 (in Asphodel 1) ; *capsule* 3-valved, usually many-seeded.—A tribe of marsh or bog plants, with cylindrical, or flat leaves sometimes filled with pith ; the flowers are usually small, and of a brownish green hue, but in Asphodel they are bright yellow, and the leaves are sword-shaped, like those of the Iris.

The true Rushes (Juncus) are, for the most part, social plants, and are often of considerable use in fixing the soil of marshes and bogs. The stems of the common species are used for making mats and the wicks of candles. The tall aquatic plant usually called the

Bulrush belongs to the *Sedge Tribe*, the Club-rush to the Order *Typhaceæ*, and the Flowering Rush to the Order *Butomaceæ*.

1. JUNCUS (Rush). — *Perianth* chaffy; *filaments* smooth; *stigmas* 3; *capsule* 3-celled, 3-valved; *seeds* numerous. (Name, the Latin name of the plant, and that from *jungo*, to join, the stems having been woven into cordage.)

2. LÚZULA (Wood-rush).—Like *Juncus*, except that the capsule is 1-celled, and only 3-seeded. (Name supposed to have been altered from the Italian *lucciola*, a glow-worm, from the sparkling appearance of the heads of flowers when wet with rain or dew.)

3. NARTHECIUM (Asphodel).—*Perianth* of 6 coloured sepals and petals; *stamens* downy; *stigma* 1; *capsule* 3-celled; *seeds* numerous. (Name from the Greek *narthex*, a rod, to which, however, the only British species bears little resemblance.)

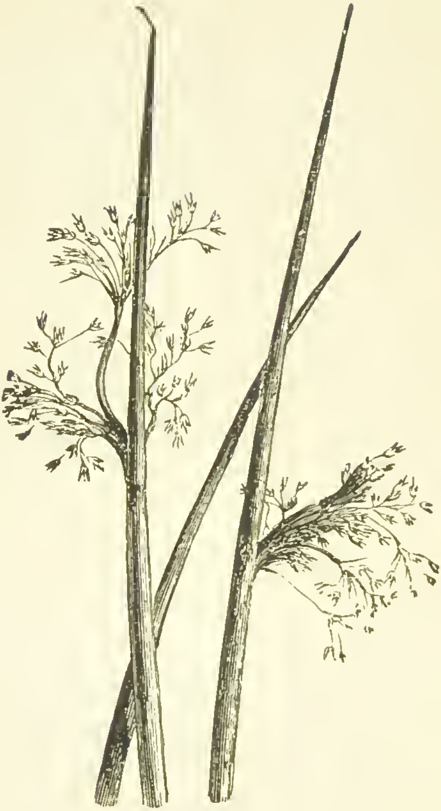
1. JUNCUS (*Rush*).

* *Stems cylindrical, tapering to a point; leaves none.*

1. *J. effúsus* (Soft Rush).—*Stems* not furrowed; *panicle* below the summit of the stem, branched and spreading; *capsule* blunt.—Marshy ground, common. This and the following species are well known as the rushes of which mats and the wicks of candles are made.—Fl. July. Perennial.

2. *J. conglomeratus* (Common Rush).—*Stems* not furrowed; *panicle* below the summit of the stem, crowded; *capsule* ending in a point.—Marshy places, common. Only distinguished from the last by its dense panicle of flowers, and pointed capsule.—Fl. July. Perennial.

3. *J. glaucus* (Hard Rush).—*Stems* deeply furrowed, rigid; *panicle* below the summit of the stem, branched and spreading.—Marshy places, and roadsides, common. Very distinct from the two last, from which it may be distinguished by its more slender, furrowed, glaucous



JUNCUS EFFÚSUS (*Soft Rush*).

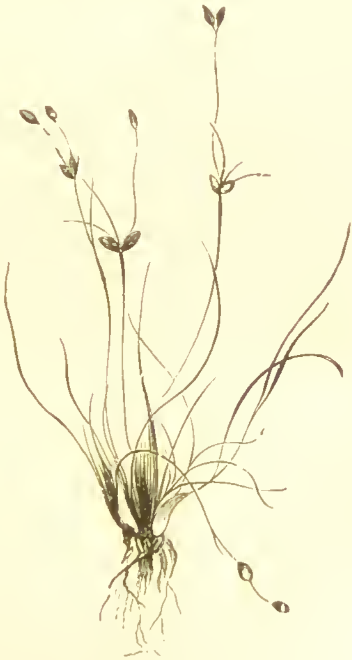
stems, and its very loose panicle of slender flowers.—Fl. July. Perennial.

* *J. maritimus* (Lesser Sea-Rush) is marked by its pungent *stems* and *bracts*, which latter are dilated at the base; *capsules* oblong, equalling the *sepals* in length: *J. acutus* (Great Sea-Rush) also has dilated *bracts*, of which the outer, as well as the *stems*, are spinous; *capsules* twice as long as the sepals; this, the largest

British species, grows on the sandy sea-shore in great abundance in a few places ; it is well marked by its stout and rigid habit, and by its large, polished *capsules.*

* * *Stems leafless ; leaves all from the root.*

4. *J. squarrósus* (Heath Rush).—*Leaves* rigid, grooved ; *panicle* terminal.—Moors and heaths, abundant. Well marked by its rigid *stems* and *leaves*, of which the latter have mostly one direction. The *stems* are about 1 foot high ; the *flowers* larger than in the marsh species, and variegated with glossy brown, and yellowish white.—Fl. June, July. Perennial.



JUNCUS ULIGINOSUS (*Lesser Bog-jointed Rush*).

* * * *Stems leafy; leaves cylindrical, or but slightly flattened, jointed internally.*

* The most common species in this group are :—

J. acutiflórus (Sharp-flowered jointed Rush), a slender plant, 1—2 feet high, with slightly flattened *stems* and *leaves*, and terminal panicles of brown sharp-pointed *flowers* : *J. lampocarpus* (Shining-fruited jointed Rush), resembling the last, but distinguished by its large, brown, glossy *capsule* : *J. obtusiflórus* (Blunt-flowered jointed Rush), rather smaller than *J. acutiflórus*, and well distinguished by its blunt *flowers* ; and *J. uliginosus* (Lesser Bog jointed Rush), a small and very variable plant, 3—8 inches high, bearing a few clusters rather than panicles of flowers. All these are common in boggy ground.

* * * * *Stems leafy; leaves not cylindrical nor jointed.*

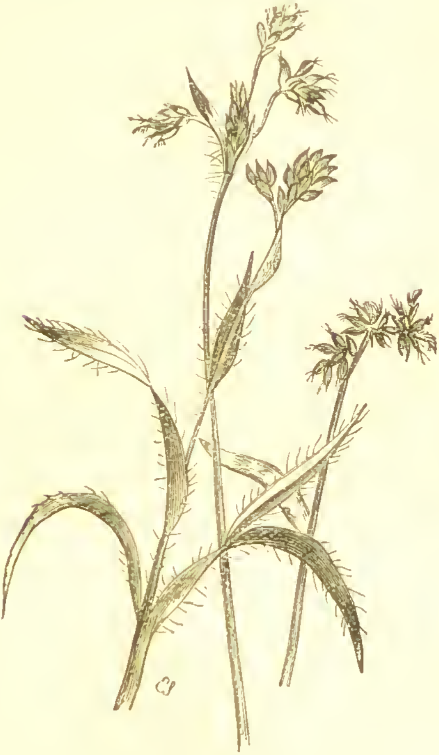
* In this group there are but two common species; *J. compressus* (Round-fruited Rush), a slender plant, about a foot high; the *leaves* are linear, and grooved above; the *stem* is slightly flattened, and terminates in a panicle of greenish-brown flowers; the *capsule* is nearly round, with a point: and *J. bufonius* (Toad Rush), a very small species, 4—6 inches high, with repeatedly forked *stems*, and solitary green *flowers*, which grow mostly on one side of the stem. For several other species growing among the mountains in the north, the student is referred to "Hooker and Arnott's British Flora."

2. LÚZULA (*Wood-Rush*).

1. *L. sylvática* (Great Wood-Rush).—*Leaves* hairy; *panicle* spreading, much branched; *flowers* in clusters of about 3.—Woods, abundant. A common woodland plant, with more of the habit of a *Grass* than a Rush. The leaves are flat and clothed with long, scattered, white hairs; the stalk rises to the height of about 2 feet, and bears a terminal loose cluster of brownish

flowers, with large light yellow anthers.—Fl. May, June. Perennial.

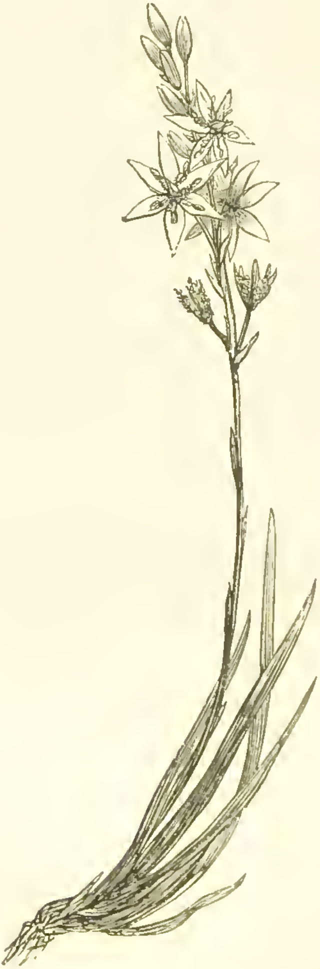
2. *L. pilósa* (Hairy Wood-Rush).—*Leaves* hairy; *panicle* little branched; *flowers* solitary.—Woods, not unfrequent. Smaller than the last, and well distinguished by its solitary flowers, the stalks of which are bent back when in fruit.—Fl. May, June. Perennial.



LÚZULA CAMPESTRIS (*Field Wood-Rush*).

3. *L. campestris* (Field Wood-Rush).—*Leaves* hairy; *panicle* of 3 or 4 dense, many-flowered clusters.—Pastures, common. Much smaller than either of the

preceding. This is one of the first grass-like plants to show flower in spring, when it may be distinguished from all other meadow-herbs by its dense *clusters* or *spikes* of brownish-green flowers, each of which contains 6 large, light-yellow anthers.—Fl. March—May. Perennial.



NARTHÉCIUM OSSÍFRAGUM (*Bog Asphodel*).

* Other British species of Wood-Rush are *L. Fórsteri* (Forster's Wood-Rush), the *panicle* of which is slightly branched, and bears its *flowers* solitary; each *capsule* contains 3 *seeds*, having a straight tail at their summits; it resembles *L. pilósa* in habit, but is much smaller; the *seeds* of the latter plant are furnished with a long hooked tail: *L. spicátà* (Spiked Mountain Wood-Rush) is about the same size as *L. campestris;* it has narrow *leaves*, bears its flowers in a compound, drooping spike, and grows only on high mountains: *L. arcuáta* (Curved Mountain Wood-Rush) is a small and very rare species, found only on the summit of the Scottish mountains; it bears its flowers in panicles, 3—5 together, on drooping stalks.

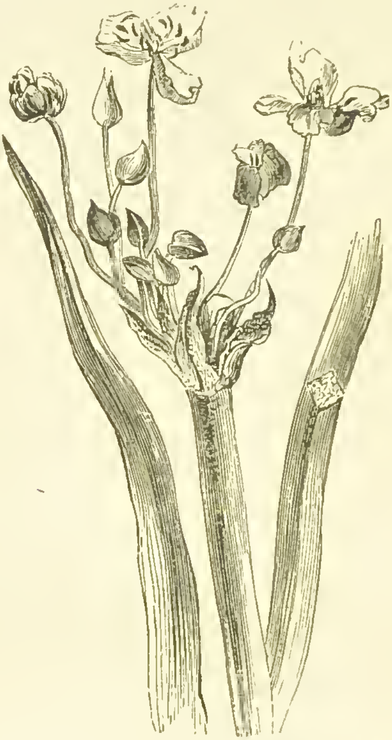
3. NARTHÉCIUM (*Asphodel*).

1. *N. ossífragum* (Bog Asphodel).—The only British species.—An elegant little plant, 6—8 inches high, with tufts of narrow sword-shaped *leaves*, like those of the *Iris*, and a tapering spike of star-like yellow *flowers.* The name *ossífragum*, bone-breaking, was given to this plant from its being supposed to soften the bones of cattle that fed on it. Other plants have had the same properties assigned to them, but there is little doubt that in every case the diseases in question are to be traced to the noxious exhalations from the bogs in which the plants grow, rather than to the plants themselves.—Fl. July—September. Perennial.

ORD. XCI.—BUTOMACEÆ.—FLOWERING RUSH TRIBE.

Sepals 3, green; *petals* 3, coloured; *stamens* varying in number; *ovaries* superior, 3, 6, or more, distinct, or united into a mass; *carpels* many-seeded.—A small tribe of aquatic plants with sword-shaped leaves and conspicuous flowers. The only British example is the Flowering Rush, described below.

1. Bútomus (Flowering Rush).—*Stamens* 9; *carpels* 6. (Name from the Greek *bous*, an ox, and *temno*, to cut; because cattle feeding on the leaves are liable to cut their mouths.)



bútomus umbellatus (*Flowering Rush*).

1. Bútomus (*Flowering Rush*).

1. *B. umbellatus* (Flowering Rush).—The only British species.—A tall, aquatic plant, growing in stagnant water and slow rivers, not uncommon. The *leaves* are sword-shaped, 2—4 feet long, and spring all from the root;

the *flowers* are large, rose-coloured, and handsome, and grow in a simple umbel at the top of a round stalk, which rises several feet above the surface of the water. —Fl. June, July. Perennial.

ORDER XCII.—ALISMACEÆ.—WATER-PLANTAIN TRIBE.

Sepals 3, green; *petals* 3, coloured; *stamens* varying in number; *ovaries* superior, numerous; *carpels* numerous, 1- or 2-seeded.—A small tribe of aquatic plants, often floating, with long-stalked leaves, and flowers which in some respects resemble those of the Crowfoot Tribe. Like the Crowfoots, too, they contain an acrid juice, though the roots of some species, deprived of their acridity by drying, are said to be used as food.

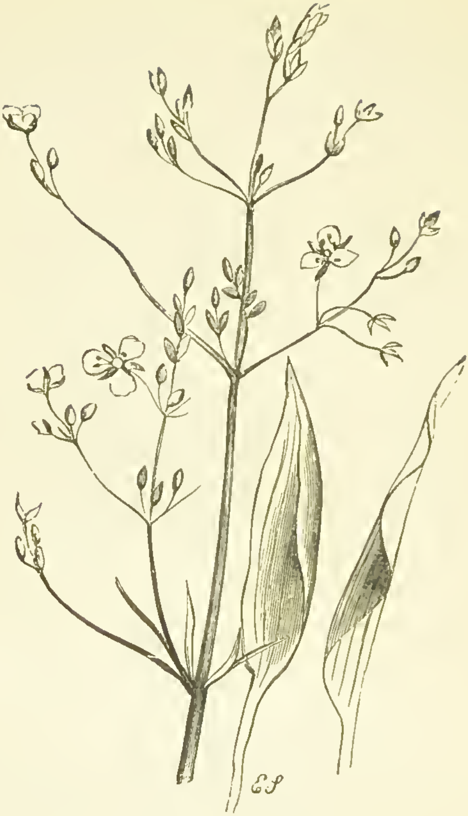
1. ALISMA (Water-Plantain).—*Flowers* containing both stamens and pistils; *stamens* 6; *carpels* numerous, 1-seeded. (Name, the Greek name of the plant, and that said to be derived from the Celtic *alis*, water.)

2. ACTÍNOCARPUS (Star-fruit).—Like *Alisma*, except that the *carpels* are 2-seeded, and spread in a radiate manner. (Name in Greek having the same meaning as the English name.)

3. SAGITTARIA (Arrow-head).—*Stamens* and *pistils* in separate flowers (*monœcious*); *stamens* numerous; *carpels* numerous, 1-seeded. (Name from the Latin *sagitta*, an arrow, from the shape of the leaves.)

1. ALISMA (*Water-Plantain*).

1. *A. Plantágo* (Great Water-Plantain).—*Leaves* all from the root, broad below, and tapering to a point; *flowers* in a compound, whorled panicle.—Margins of rivers, lakes, and ponds; common. A stout, herbaceous plant, 2—3 feet high, with large, stalked leaves, ribbed like those of a *Plantain*, and a leafless, whorled panicle



ALISMA PLANTÁGO (*Great Water-Plantain*).

of lilac flowers, the petals of which are very delicate, and soon fall off.—Fl. June—August. Perennial.

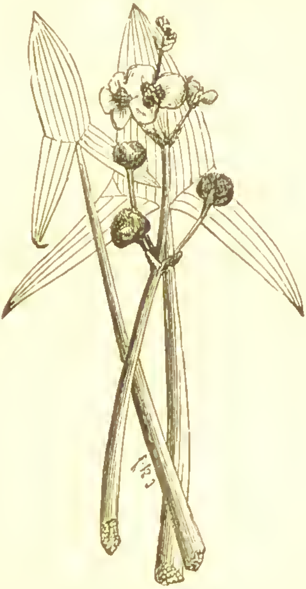
2. *A. ranunculoídes* (Lesser Water-Plantain).—*Leaves* narrow, and tapering at both ends; *flowers* in umbels.—Peaty bogs, not uncommon. Much smaller than the last, and well marked by the above characters, as well as by its larger flowers.

* *A. natans* (Floating Water-Plantain) is found only in mountain lakes; it has floating leafy *stems*, and the

flowers, which are solitary, are white, with a yellow spot.

2. Actínocarpus (*Star-fruit*).

1. *A. Damasonium* (Common Star-fruit).—The only British species.—Ditches in the midland counties, not common. An aquatic plant, with the habit of a Water-Plantain. The *leaves* grow on long stalks and float on the surface of the water; the *flowers,* which grow in whorls, are white, with a yellow spot at the base of each petal; the *fruit* is composed of 6 pointed carpels, which are arranged in the form of a star.—Fl. June, July. Perennial.



SAGITTARIA SAGITTIFOLIA (*Common Arrow-head*).

3. Sagittária (*Arrow-head*).

1. *S. sagittifolia* (Common Arrow-head).—The only British species.—Rivers and ditches, not unfrequent.

A pretty plant, well distinguished by its large arrow-shaped *leaves*, and whorled panicles of delicate, flesh-coloured *flowers*, both of which rise 6—8 inches out of the water. This is one of the very few plants which neither smoke nor buildings have driven out of London, there being still large beds of it in the Thames, near the Temple Gardens and Hungerford Market, where the eager botanist may even yet gather fine specimens.* Fl. July—September. Perennial.

*** This was written in 1851.**

ORD. XCIII.—JUNCAGINACEÆ.—ARROW-GRASS TRIBE.

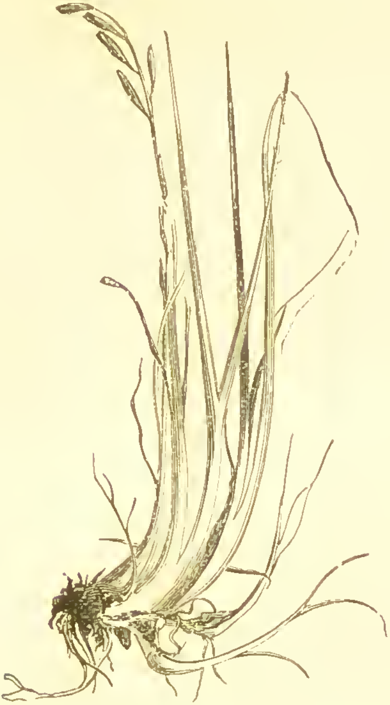
Flowers perfect; *sepals* and *petals* alike, green and small; *stamens* 6; *ovaries* 3—6, superior, united or distinct; *carpels* 3—6, 1—2 seeded.—A small order of marsh plants, with linear leaves, all proceeding from the root, and spike-like clusters of inconspicuous flowers; found in many parts of the world, and possessing no remarkable properties.

1. TRIGLÓCHIN (Arrow-grass).—*Flowers* in a spike; *sepals* and *petals* 6; *stamens* 6. (Name from the Greek *treis*, three, and *glochis*, a point: from the three points of the capsule.)

1. TRIGLÓCHIN (*Arrow-grass*).

1. *T. palustre* (Marsh Arrow-grass).—*Fruit* linear, of 3 combined *carpels.*—Marshy places, frequent. A plant with something of the habit of *Plantago marítima*, from which it may easily be distinguished by its fewer flowers and slenderer spike, as well as by the different structure of the flowers. The leaves are linear and fleshy.—Fl. June—August. Perennial.

2. *T. marítimum* (Sea Arrow-grass).—*Fruit* egg-shaped, of 6 combined *carpels.*—Salt marshes, common. Like the last, but well marked by its rounded, not linear, capsule.—Fl. May—September. Perennial.

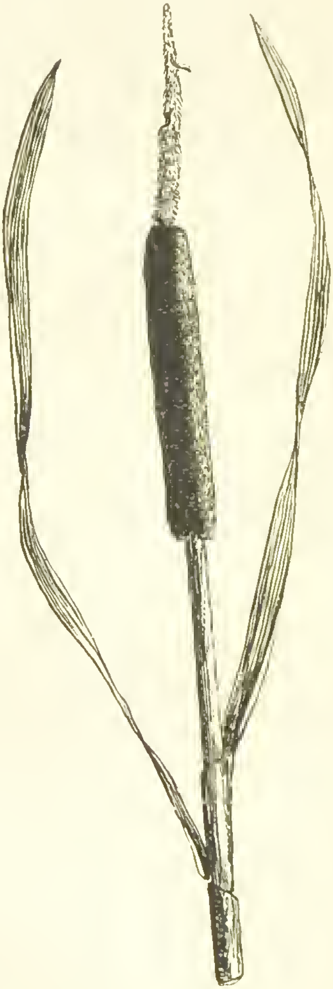


TRIGLÓCHIN PALUSTRE (*Marsh Arrow-grass*).

* *Scheuchzeria palustris*, which belongs to this order, is a very rare plant, found only in the north. It has a few semicylindrical, blunt leaves, and a leafless stalk, terminating in a cluster of 5—6 green flowers.

ORD. XCIV.—TYPHÁCEÆ.—REED-MACE TRIBE.

Stamens and *pistils* separate, but on the same plant (*monœcious*); *flowers* in dense spikes or heads not enclosed in a sheath; *perianth* composed of 3 scales or a tuft of hairs; *stamens* 3—6, distinct, or united by their filaments; *anthers* long, and wedge-shaped; *ovary* single, superior, 1-celled; *style* short; *stigma* linear, lateral; *fruit* 1-celled, 1-seeded, not opening, angular



TYPHA LATIFOLIA (*Great Reed-Mace, or Cat's Tail*).

by mutual pressure.—Herbaceous plants, growing in marshes or ditches, with jointless stems, sword-shaped leaves, and small flowers, which are only conspicuous from their compact mode of growth. The order contains only two families, examples of both of which are of common occurrence in Great Britain.

1. Typha (Reed-mace).—*Flowers* in spikes. (Name from the Greek *typhos*, a marsh, where these plants grow.)

2. Spargánium (Bur-reed).—*Flowers* in globular heads. (Name in Greek denoting a little band, from the ribbon-like leaves.)

1. Typha (*Reed-Mace*).

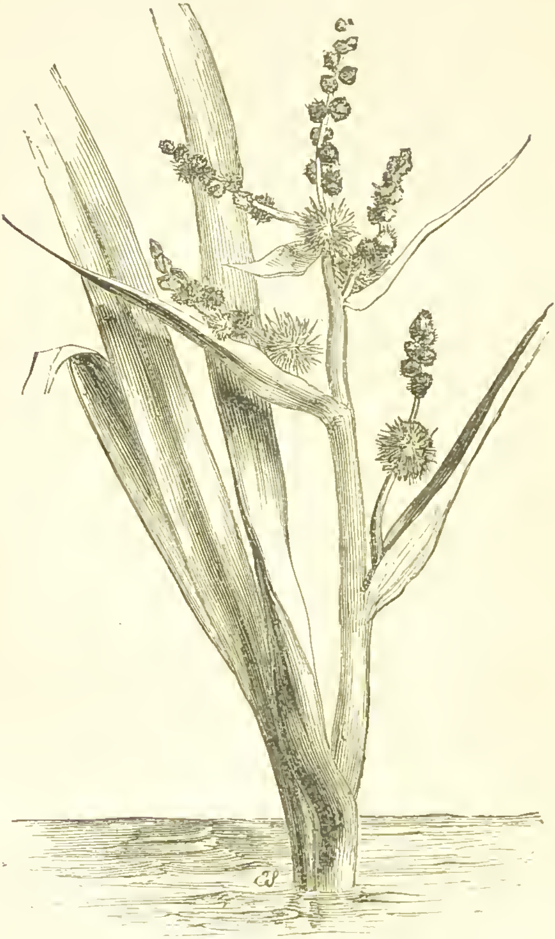
1. *T. latifolia* (Great Reed-Mace, or Cat's Tail).—*Leaves* nearly flat; *barren* and *fertile spikes* continuous.—Ponds, common. Our largest herbaceous aquatic, often growing 6—8 feet high, with linear leaves, and stout, cylindrical stems, surmounted by a club-like spike, the lower part of which contains fertile flowers only, the upper barren. It is often, but incorrectly, called *Bulrush*, the true Bulrush being *Scirpus palustris*, a plant which has more of the habit of a gigantic rush.—Fl. July, August. Perennial.

2. *T. angustifolia* (Lesser Reed-Mace, or Cat's Tail).—*Leaves* grooved below; *barren* and *fertile spikes* slightly interrupted.—Ponds, less frequent than the last, from which it differs by the above characters, and by its smaller size.—Fl. July, August. Perennial.

2. Spargánium (*Bur-reed*).

1. *S. ramósum* (Branched Bur-reed).—*Leaves* triangular at the base, with concave sides; *stem* branched.—Ditches, common. A large aquatic, which at a distance might be mistaken for a Flag (*Iris Pseudácorus*). The leaves are sword-shaped, and the flowers are collected into globular heads, of which the lower

contain fertile flowers only, the upper barren.—Fl. July, August. Perennial.



SPARGANIUM RAMOSUM (*Branched Bur-reed*).

2. *S. simplex* (Unbranched upright Bur-reed).—*Leaves* triangular at the base, with flat sides; *stem* un-

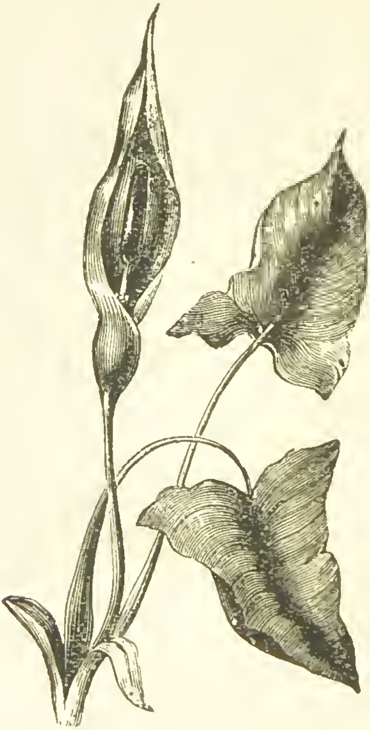
branched.—Ditches, common. Smaller than the last, and at once distinguished by the above characters.

* *S. natans* (Floating Bur-reed) is found only in the north. It has very long, pellucid, floating *leaves*, and *flowers* resembling those of the preceding species, except that the *barren head* is usually solitary.

ORD. XCV.—ARACEÆ.—THE CUCKOO-PINT TRIBE.

Stamens and *pistils* separate, but on the same plant (*monœcious*); *flowers* arranged on a *spadix*, or central column, and enclosed in a sheath; *perianth* 0; *stamens* numerous, sessile on the spadix; *ovaries* the same, below the stamens; *stigma* sessile; *fruit* a berry.—A curious tribe of plants, all more or less resembling the British species, *Arum maculátum*, abounding in tropical countries, and possessing acrid, or even poisonous qualities, which, however, may be dissipated by heat. The most remarkable plant of the order is the Dumb-Cane of the West Indies, a species growing as high as a man, and having the property, when chewed, of swelling the tongue and destroying the power of speech. The effects continue for several days, and are accompanied with much pain. Other species, which are scarcely less noxious in their fresh state, are extensively cultivated in tropical countries, and produce tuberous roots, which, when cooked, are important articles of food. Even the British example of the order (*Arum maculátum*), though its juice is so intensely acrid that a single drop will cause a burning taste in the mouth and throat, which continues for hours, has roots which, when properly prepared, are wholesome and nutritious. This plant is cultivated in the Isle of Portland, and the starch procured from the roots is, under the name of Portland Sago, used as a substitute for arrow-root. Several species have been observed to evolve a considerable quantity of heat from the spadix at the time of the expansion of the sheath.

1. Arum (Cuckoo-pint).—*Flowers* on a club-shaped *spadix*, which is naked above, and enclosed in a convolute *sheath*. (Name, the Greek name of the plant.)



ARUM MACULATUM (*Cuckoo-pint, Wake-Robin, Lords-and-Ladies*).

1. Arum (*Cuckoo-pint*).

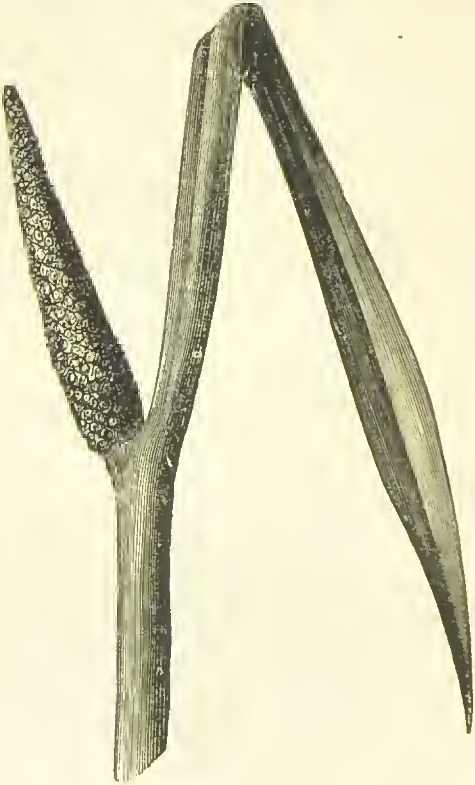
1. *A. maculátum* (Cuckoo-pint, Wake-Robin, Lords-and-Ladies).—The only British species.—Hedges and

woods, common in most parts of England. A succulent, herbaceous plant, with large, glossy, arrow-shaped leaves, which are often spotted with dark purple. The upper part of the *spadix* is club-shaped, and of a light pink, dull purple, or rich crimson colour, which is easily rubbed off; about the middle of the *spadix* is a ring of glands, terminating in short threads, the use of which is unknown; below this is a ring of sessile *anthers*, and yet lower down another row of sessile *ovaries*. The upper part of the *spadix* soon falls off, leaving the *ovaries*, which finally become a cylindrical mass of scarlet *berries*, which are conspicuous objects when all the rest of the plant has withered and disappeared. The *spadix* with its *sheath* may be discerned wrapped up in the young leaf-stalks, even before the leaves have risen above the surface of the ground.—Fl. May, June. Perennial.

ORD. XCVI.—ORONTIACEÆ.—SWEET SEDGE TRIBE.

Flowers perfect, arranged on a central column or *spadix*, at first enclosed in a *sheath*; *perianth* of 4—8 scales; *stamens* equalling the scales in number; *ovary* superior; *fruit* a berry.—A tribe of plants nearly allied to the *Araceæ*, and resembling them in properties. *Calla Æthiópica* is, under the name of Egyptian Lily, perhaps better known than the only British species, *Acorus Cálamus*, or Sweet Sedge. This last plant is said to have supplied the "rushes" with which, before the use of carpets had been introduced into England, it was customary to strew the floors of the great. As it did not grow in the neighbourhood of London, but had to be fetched at considerable expense from Norfolk and Suffolk, one of the charges of extravagance brought against Cardinal Wolsey was that he caused his floors to be strewed with rushes too frequently. It is still used to strew the floor of the cathedral at Norwich on festival days.

1. Ácorus (Sweet Sedge).—*Sheath* leaf-like, not convolute, overlapping the *spadix*. (Name in Greek denoting that the plant has the power of curing diseases in the pupil of the eye.)



Ácorus cálamus (*Sweet Sedge*).

Ácorus (*Sweet Sedge*).

1. *A. Cálamus* (Sweet Sedge).—The only British species.—Watery places in Norfolk and Suffolk. An

aquatic plant, with somewhat of the habit of a *sedge* or large *grass.* It is easily distinguished from all other British plants by its peculiar *spadix,* and the fragrance of its roots, stems, and leaves.—Fl. June. Perennial.

ORD. XCVII.—PISTIACEÆ.—DUCK-WEED TRIBE.

Minute floating plants, composed of simple or lobed *leaves,* and fibrous *roots,* which are not attached to the soil, propagating themselves principally by offsets, but sometimes producing on the edge of the leaves 1—2 *stamens,* and 1—4 seeded *ovaries,* enclosed in small *sheaths.* *Lemna* (Duck-weed) is the only British example, and the number of foreign species is but small.

LEMNA MINOR (*Lesser Duck-weed*)

1. LEMNA (*Duck-weed*).

1. *L. minor* (Lesser Duck-weed).—A minute plant, but often so abundant as to cover the surface of stagnant water, where, with the insects which it harbours, it is greedily devoured by ducks. In this species the *leaves* are egg-shaped, and bear each a single *root.* Three other species have been found in Britain, for a description of which the student is referred to "Hooker and Arnott's British Botany."

ORD. XCVIII.—NAIADACEÆ.—POND-WEED TRIBE.

Submersed or floating aquatics with very cellular *stems* and peculiar *leaves*, which are sometimes almost leathery, but more frequently thin and pellucid. The flowers are small, olive-green, resembling in structure the Arrow-grasses; sometimes solitary, but more frequently arranged in spikes, they inhabit ponds and slow streams, or rarely salt marshes. One British species, *Zostéra marína*, grows in the sea.

1. POTAMOGÉTON (Pond-weed).—*Flowers* in a spike; *stamens* and *pistils* in the same flower; *perianth* of 4 sepals; *stamens* 4; *carpels* 4, sessile. (Name from the Greek *pótamos*, a river, and *geíton*, a neighbour.)

2. RUPPIA.—*Flowers* about 2 on a stalk; *stamens* and *pistils* in the same flower; *perianth* 0; *stamens* 4; *carpels* 4, at first sessile, afterwards raised each on a long stalk. (Named in honour of H. B. Ruppius, a botanist of the 18th century.)

3. ZANNICHELLIA (Horned Pond-weed).—*Flowers* axillary; *stamens* and *pistils* separate (*monœcious*): *stamen* 1; *carpels* 4. (Named in honour of J. J. Zannichelli, a Venetian botanist.)

POTAMOGETON NATANS (*Floating Pond-weed*)

4. ZOSTÉRA (Grass-wrack).—*Flowers* composed of *stamens* and *pistils* alternately arranged in 2 rows in a long leaf-like *sheath*. (Name from the Greek *zoster*, a girdle, which the leaves resemble in form.)

1. POTAMOGÉTON (*Pond-weed*).

1. *P. natans* (Floating Pond-weed).—*Upper leaves* elliptical, ribbed, and cellular, *lower* submersed, linear. —Ponds and ditches, common. An aquatic plant, with cord-like stems, proportioned to the depth of the water in which it grows; smooth, floating leaves, on long stalks; and cylindrical spikes of small green flowers, which rise above the surface of the water. The upper, or floating leaves are 2—3 inches in length, the lower, which are not always present, are very narrow and a foot long, or more.—Fl. June—August. Perennial.

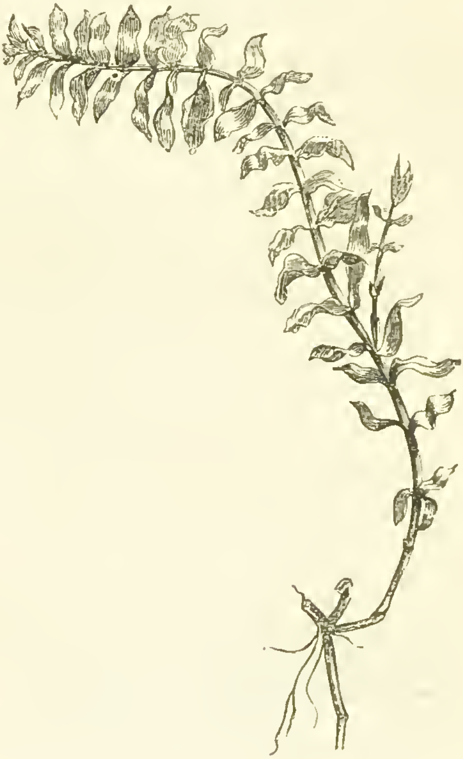
2. *P. perfoliátus* (Perfoliate Pond-weed).—*Leaves* alternate, all submersed, egg-shaped, embracing the stem, pellucid, 7-nerved.—Ponds and lakes, common. Remarkable for its brown, almost transparent leaves, 2—3 inches long, which when dry have the appearance of gold-beaters' skin, and are so sensitive of moisture, that they will curl when laid on the palm of the hand.—Fl. June—August. Perennial.

3. *P. densus* (Opposite-leaved Pond-weed).—*Leaves* opposite, all submersed, embracing the stem, pellucid. —Ponds and rivers, common. Like the last in habit, but smaller.—Fl. June—August. Perennial.

4. *P. pusillus* (Small Pond-weed).—*Leaves* linear, very narrow; *flowers* in a long-stalked, loose spike.— Ponds and lakes, common. A tangled mass of thread-like stems, and dull, olive-green leaves, with numerous spikes of brownish flowers, which are either submersed, or partially rise above the surface of the water.—Fl. June—August. Perennial.

* From 18 to 20 species of Pond weed are described as natives of Britain; they all, more or less, resemble

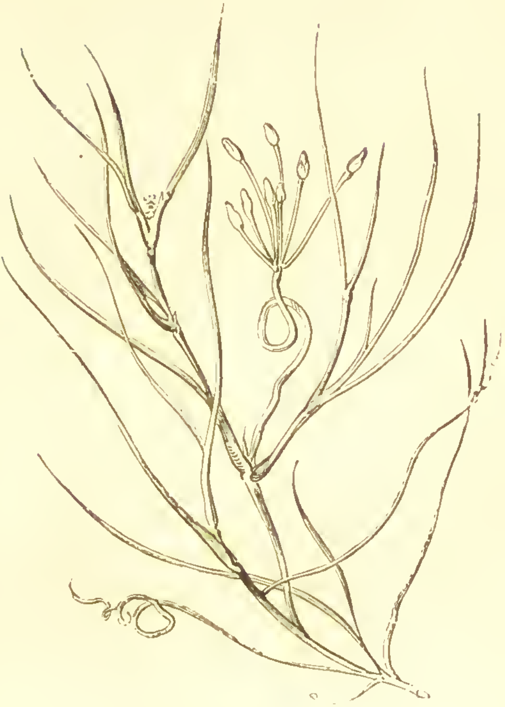
the above in habit, and as they are by no means an interesting family of plants, easy to obtain, or pleasant to examine, it is not thought necessary to describe their characters in an elementary work like this.



POTAMOGÉTON DENSUS (*Opposite-leaved Pond-weed*).

2. Ruppia.

1. *R. maritima* (Sea Ruppia).—The only species, growing in salt-water ditches, distinguished from *Potamogéton pusillus* by its spiral *flower-stalks*, and long-stalked *fruit*.—Fl. July—August.



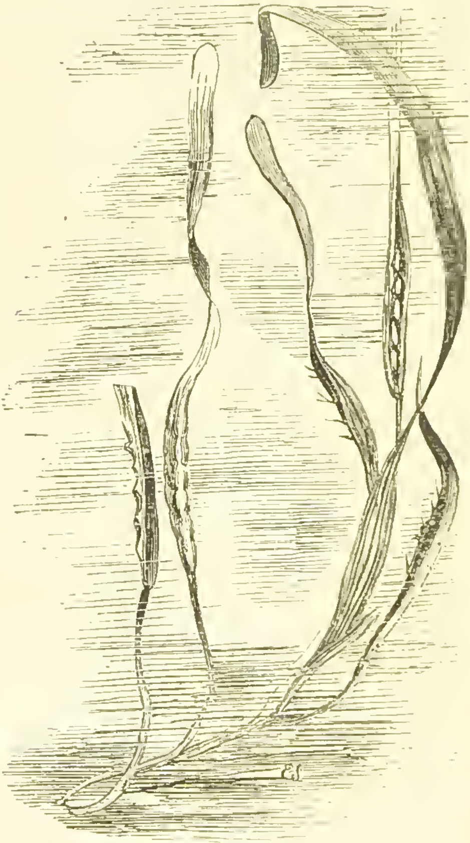
RUPPIA MARITIMA (*Sea Ruppia*).

3. ZANNICHELLIA (*Horned Pond-weed*).

1. *Z. palustris* (Horned Pond-weed).—The only British species. A submersed aquatic, with the habit of *Potamogéton pusillus*, from which it may be well distinguished by its small, almost sessile, axillary *flowers*, the *stigmas* of which are unevenly cup-shaped.—Fl. August, September. Perennial.

4. ZOSTÉRA (*Grass-wrack*).

1. *Z. marína* (Grass-wrack).—A submersed marine aquatic, with long, cord-like *stems,* and bright green, grass-like *leaves,* some of which serve as *sheaths* to the bead-like rows of small simple flowers. The dried leaves and stems are used as beds, and are also employed in packing glass. The inner fibre has been recommended as a substitute for cotton.—Fl. July, August. Perennial.



ZOSTERA MARÍNA (*Grass wrack*).

ENGLISH INDEX

AND

GLOSSARY OF BOTANICAL TERMS.

Abele. See *Poplar.*
  abrupt, blunt, as if broken off.
  acuminate, tapering to a sharp point.
  acute, sharp-pointed.
Adder's-meat, 101.
  æstivation, the state of flowers in bud.
Agrimony, 175, 194
Agrimony, Hemp, 326, 357.
Alder, 569.
Alexanders, 249, 257.
Alkanet, 429, 437.
Allseed, 228, 230.
ALMOND GROUP, 171.
  alternate, iv.
AMARYLLIS TRIBE, 598.
Andromeda, 395, 400
Anemone, 3, 7.
Angelica, 252, 274.
  angular, vi.
  annual, lasting one year.
  anther, x.
  apetalous, without petals
APPLE GROUP, 177.
Apple, 203.
  aquatic, growing in water
Archangel, 490.
  arillus, a dry covering of some seeds, as *mace.*
ARROW-GRASS TRIBE, 634.
Arrow-grass, 634.
Arrow-head, 631, 633.
  arrow-shaped, vi.
Asarabacca, 518.
  ascending, iv.
Ash, 408, 410.
ASPARAGUS GROUP, 608
Asparagus, 608, 611.
Aspen. See *Poplar.*
Asphodel, 621, 622, 623, 629.
Avens, 174, 184.
Avens, Mountain, 174, 183.
  awl-shaped, x.
Awl-wort, 38, 49.
  awn, a stiff bristle, as in *barley*
  axil, the angle between a leaf and the stem, iv.
  axillary, growing in an axil.
Azalea, 394, 400.

Bald-money, 272.
Balm, Wild, 475, 501.
BALSAM TRIBE, 129.
Balsam, 131.
Bane-berry, 4, 21.
BARBERRY TRIBE, 22.
Barberry, 23, 24.
  barren, bearing stamens, but no pistils, xi.
Barrenwort, 23, 24.
Bartsia, 455, 466.
Basil Thyme, 478, 499.
Basil, Wild, 478, 499.
Bastard Toad-flax, 546, 547.
Beaked-Parsley, 253, 281.
Beam, White, 206.
BEAN TRIBE, 139.
Bear-berry, 395, 401.
Bed-straw, 303, 304.
Bee Orchis, 592.
Beech, 571.
Beet, 529, 534.
BELL-FLOWER TRIBE, 382.
Bell-flower, 382, 383.
  bell-shaped, ix.
  berry, xii.
Betony, 177, 493.
  biennial, lasting two years
  bifid, two-cleft.

Bilberry, 390.
BINDWEED TRIBE, 423.
Bindweed, 424.
  bipinnate, twice pinnate.
  bipinnatifid, twice cut in a pinnate manner.
BIRCH GROUP, 569.
Birch, 569.
Bird-cherry, 179.
Bird's-eye, 470.
Bird's-foot, 143, 168.
Bird's-foot Trefoil, 142, 157.
BIRD'S-NEST TRIBE, 402.
Bird's-nest, 402, 405.
Bird's-nest Orchis, 590.
BIRTHWORT TRIBE, 547.
Birthwort, 547, 548.
Bistort, 538.
Bitter-Cress, 38, 55.
Bittersweet, 445.
Bitter-Vetch, 143, 166.
Blackberry, 192.
Black-Bryony, 604, 605.
Black-Horehound, 476, 487.
Blackthorn, 178.
Bladder Campion, 92.
Bladder seed, 285.
Bladderwort, 507, 508.
Blinks, Water, 227.
Blite, Sea, 529, 532.
Blue-bell, 614.
Blue-bottle, 326, 354
Blue Flea-bane, 328, 367.
Bog-Asphodel, 622, 629.
Bog-Orchis, 594.
BORAGE TRIBE, 427.
Borage, 429, 435.
  border, the expanded part of the corolla, ix.
Box, 553, 556.
Bramble, 175, 192.
  bracts, small leaves at the base of a flower-stalk, vii.
Brier, Sweet, 200.
  bristly, xiii.
Brocoli, 69.
Brooklime, 471.
Brookweed, 512, 522.
Broom, 141, 148.
BROOM-RAPE TRIBE, 449.
Broom-rape, 450.
Brussels-Sprouts, 69.
Bryony, Black, 604, 605.
Bryony, White, 225.
Buckbean, 414, 420.
BUCKTHORN TRIBE, 136.
Buckthorn, 138, 139.
Buckthorn, Sea, 541.
Buckwheat, 539.
Bugle, 476, 485.
Bugloss, 429, 436.
Bugloss, Viper's, 428, 429.
  bulbous, iii.
Bullace, 179.
Bur, Butter, 364.
Burdock, 325, 346.
Bur-Marigold, 326, 356.
Bur-Medick, 150.
BURNET GROUP, 175.
Burnet, 175, 196.
Burnet, Salad, 198.
Burnet-Saxifrage, 250, 265.
Bur-Parsley, 252, 279.
Bur-Reed, 637, 638.
Butcher's-Broom, 609, 611.
Butter-Bur, 327, 364.
Buttercup, 3, 8.
Butterfly Orchis, 587.
BUTTERWORT TRIBE, 506.
Butterwort, 507.

Cabbage, 40, 66.
  caducous, falling off very early, as the sepals of the poppy.
Calamint, 478, 499.
  calyx, the outer case of a flower, viii.
Campion, 88, 92, 95.
  capillary, hair-like, vi.
  capitate, round like a head.
  capsule, a dry seed-vessel, xii.
Caraway, 250, 262.
Carline-Thistle, 326, 353.
Carnation, 90.
  carpels, ovaries with their styles and stigmas, xi.
Carrot, 252, 278.
Catchfly, 88, 92.
  catkin, xiv.
CATKIN-BEARING TRIBE, 565.
Catmint, 477, 497.
Cat's-ear, 324, 334.
Cat's-tail, 637.
Cauliflower, 69.
Celandine, 28, 31.
Celandine, Lesser, 3, 11.
Celery, 250, 258.
  cell, a *vesicle*, or little bladder, the simplest form of vegetable structure.
  cellular, composed of cells.
Centaury, 413, 416.
  cernuous, nodding.
Chaffweed, 511, 519.
  chaffy, xiii.
Chamomile, 329, 379.
Chamomile, Wild, 379.
Cherlock, 70.
CHERRY GROUP, 179.
Cherry, 173, 178.
Chervil, 253, 284.
Chestnut, 571.

Chicory, 325, 344.
CHICKWEED TRIBE, 89.
Chickweed, 101.
Chickweed, Jagged, 89, 101.
Chickweed, Mouse-ear, 89, 90, 105, 106.
Chickweed Winter-green, 511, 519.
Chives, 619.
Cicely, 253, 284.
ciliated, fringed.
Cinquefoil, 174, 185.
Cinquefoil, Marsh, 174, 189.
circinate, curled, like the young frond of a fern.
Clary, 480.
claw, the base of a petal, ix.
Cleavers, 306.
Clove-Pink, 90.
Clover, 152, 153.
Clover, Spotted, 150.
Cloudberry, 194.
Clubrush, 637.
club-shaped, cylindrical, but becoming larger from the base upwards.
cluster, xiii.
Cockle, 97.
Cock's-comb, 466.
Cocks-and-Hens, 525.
Cole-seed, 69.
coloured, not green, viii.
Colt's-foot, 366.
Columbine, 4, 20.
column, a name given to the united pistil and stamens in the Orchis Tribe.
Comfrey, 428, 433.
compound, iv. v. xiv.
Compound Flowers, 319.
cone, the fruit of the Fir Tribe, xii.
conical, xiii.
connate, growing together, v.
convolute, rolled together.
Coral-root, 38, 55.
Coral-rooted Orchis, 593.
Coriander, 286.
corculum, the same as embryo.
cordate, heart shaped.
corm, a solid bulbous root, iii.
Corn-Cockle, 89, 98.
CORNEL TRIBE, 289.
Cornel, 289, 291.
Corn-Flag, 595.
Cornish Money-wort, 155, 468.
Corn-Marigold, 376.
Corn-Salad, 311, 313.
corolla, the inner leaves or *petals* of a flower, viii.
corymb, xiii.
Cotton Thistle, 351.
Cotton-weed, 327, 358.
cotyledon, a seed-lobe, xii. 1.
Cowbane, 249 ,257.
Cowberry, 392.
Cow-Parsnep, 252, 276.
Cowslip, 513.
Cow-wheat, 454, 462.
Crab-Apple, 203.
Crake-berry, 549.
CRANBERRY TRIBE, 389.
Cranberry, 390, 392.
Crane's-bill, 124.
creeping, iii. iv.
crenate, scolloped at the edge.
Cress, Bitter, 55.
Cress, Rock, 39, 58.
Cress, Swine's, 53.
Cress, Wall or Thale, 64.
Cress, Water, 61.
Cress, Winter, 39, 59.
Cress, Wart, 38, 54.
Cress, Yellow, 48, 62.
Crimean Snowdrop, 604
Crocus, 598.
Cross-wort, 304.
CROWBERRY TRIBE, 548.
Crowberry, 549.
CROWFOOT TRIBE, 2.
Crowfoot, 3, 8.
CRUCIFEROUS TRIBE, 36.
cruciform, placed crosswise, x.
cryptogamous, or cryptogamic; plants are so called which are reproduced without the aid of stamens and pistils
Cuckoo-flower, 55.
CUCKOO-PINT TRIBE, 639.
Cuckoo-pint, 640.
Cudweed, 327, 361, 362.
culm, the stalk of grasses
CURRANT TRIBE, 239.
Currant, 239, 240.
cuticle, the thin outer skin of a plant.
cyme, xiv.
cymose, growing in the form of a cyme.
Cyphel, 90, 107.

Dabeoc's, St., Heath, 399.
Daffodil, 601, 602.
DAISY GROUP, 323, 327, 366
Daisy, 328, 376.
Dandelion, 325, 342.
DAPHNE TRIBE, 544
Deadly-Nightshade, 444, 447.
Dead-Nettle, 477, 492
Dead-Nettle, Yellow, 490.
deciduous, soon falling off.
decurrent, running down the stem.
Dewberry, 192.

  dichlamydeous, having a double perianth.
  dicotyledonous, composed of two seed-lobes, xii. 1.
  didynamous, having four stamens, two long and two short.
  diœcious plants are those which have the stamens and pistils in separate flowers and on different plants.
  disk, the central part of a compound flower, ix. ; a flat space surrounding the ovary.
Dock, 538, 541.
Dodder, 424, 426.
Dog-Mercury, 553.
Dog-Rose, 201.
Dog-Violet, 78.
Dogwood, 291.
  dotted, xiii.
Dropwort, 173, 181.
Dropwort, Water, 251, 269.
  drupe, a nut enclosed in pulp, xii.
Duckweed Tribe, 643.
Duckweed, 643.
  duct, an imperfectly spiral vessel.
Dutch Clover, 152.
Dwale, 447.
Dyer's-Rocket, 72.

Earth-nut, 250, 263.
  egg-shaped, oval, with the base broader than the extremity, vi.
Eglantine, 200.
Elder, 295, 296.
Elder, Water, 297.
Elecampane, 328, 373.
  elliptical, egg-shaped, with both ends alike, vi.
Elm Tribe, 564.
Elm, 564.
  emarginate notched.
  embryo, the bud contained in a seed.
Enchanter's Nightshade, 209, 212.
Endogens, xiii.
  ensiform, sword-shaped.
  entire, not cut at the edge, v.
  epidermis, the cuticle.
  erect, iv.
Eryngo, 249, 255.
Evening Primrose, 209, 212.
Everlasting, 327. 361.
Everlasting-Pea, 164.
Exogens, xii.
  exserted, protruded beyond the other parts.
Eye-bright, 455, 467.

  family, xxi.
  farinaceous, abounding in flour.
  fascicled, growing in a dense tuft.
Fennel, 251, 271.
  fertile, bearing pistils and producing seeds, xi.
Fenugreek, 142, 152.
Feverfew, 377.
Field-Madder, 303, 309.
Field-Scabious, 315, 318.
Fig-wort Tribe, 453.
Fig-wort, 454, 460.
  filament, x.
Fir Tribe, 574.
Fir, 575.
Fir-rape, 405.
Flag, 595.
Flax Tribe, 107.
Flax, 108.
Flax-seed, 108, 110.
Flea-bane, 328, 374.
Flea-bane, Blue, 328, 367.
Flixweed, 63.
  floret, a small flower in the Nat. Ord. Compositæ.
  flower, vii.
Flower-de-Luce, 595.
Flowering-Rush Tribe, 629.
Flowering-Rush, 630.
Flowering-Willow, 209.
Fluellen, 458.
Fly-Orchis, 592.
Fool's-Parsley, 251, 270.
Forget-me-not, 429, 438.
  forked, iv.
Fowler's-Service, 204.
Foxglove, 454, 456.
  free, not united, xi.
  fringed, v.
Fritillary, 611, 620.
Frog-bit Tribe, 579.
Frog-bit, 581, 582.
  frond, the leaf of a fern.
  fructification, the parts composing the fruit.
  fruit, the seed with its covering, xii.
Fullers'-Teasel, 315.
Fumitory Tribe, 32.
Fumitory, 33, 34.
  funnel-shaped, ix.
  furcate, forked.
Furze, 141, 144.
  fusiform, spindle-shaped.

Gagea, 610, 620.
Gale, Sweet, Group, 568.
Gale, Sweet, 568.
  gaping, having an open mouth, ix.
Garlic, 609, 618.
Garlic-Mustard, 39, 65.
  generic name, xxii.

Gentian Tribe, 412.
Gentian, 413, 414.
Gentianella, 413, 418.
genus, genera, xxi.
Geranium Tribe, 123.
germen, or ovary, the lowest part of the pistil, xi.
Germander, 476, 486.
Germander Speedwell, 470.
gibbous, swollen at the base, as in the flowers of *Snapdragon*
Gillyflower, 90.
Gipsywort, 475, 478.
glabrous, perfectly smooth.
gland, a cell containing some secretion.
Glasswort, 530, 535.
glaucous, covered with a pale green bloom.
Globe-flower, 3, 14.
glume, the chaff of the grasses
Goat's-beard, 323, 329.
Golden-rod, 328, 368.
Golden-Samphire, 374.
Golden-Saxifrage, 241, 245.
Goldylocks, 326, 358.
Good-King-Henry, 530.
Goodyera, 593.
Gooseberry Tribe, 239
Gooseberry, 239, 240.
Goose-foot Tribe, 528.
Goose-foot, 529, 530.
Goose-grass, 185, 306.
Gorse, 144.
Gout-weed, 250, 262.
Gourd Tribe, 224.
Grass-of-Parnassus, 80, 81.
Grass-wrack, 645, 648.
Greek-Valerian, 422.
Green-weed, 141, 145.
Grey-Millet, 432.
Gromwell, 428, 432.
Ground-Ivy, 477, 498.
Ground-Pine, 486.
Groundsel, 328, 370.
Guelder Rose, 296.

habitat, the locality in which a plant grows.
Harebell, 384, 616.
halbert-shaped, arrow shaped with the barbs turned outwards, vi.
Hare's-ear, 251, 268.
Hare's-foot, 154.
hastate, halbert-shaped.
Hawk bit, 324, 332.
Hawk's-beard, 324, 338.
Hawk-weed, 324, 340.
Hawthorn, 178, 2 6.
Hazel, 573.
head, xiv.
Heartsease, 78.
heart-shaped, vi.
Heath Tribe, 392.
Heath, 394, 395.
Heather, 394, 398.
Hedge-Mustard, 39, 62.
Hedge-Parsley, 252, 279.
Hellebore, 3, 17.
Helleborine, 252.
Hemlock, 249, 257.
Hemlock, Water, 249, 257, 268.
Hemp-Agrimony, 326, 357.
Hemp-Nettle, 477, 491.
Henbane, 444, 447.
herbaceous, having a succulent stem.
Herb-Bennet, 184.
Herb-Christopher, 21.
Herb-Paris Tribe, 606.
Herb-Paris, 607.
Herb-Robert, 126.
hispid, bristly.
Herb-Twopence, 518.
Hog's-Fennel, 286.
Hogweed, 276.
Holly Tribe, 405.
Holly, 406, 407.
Holly, Sea, 255.
Honewort, 285.
Honeysuckle, 296, 299.
Hop, 561, 563.
Horehound, Black, 478, 487.
Horehound, White, 478, 498.
Hornbeam, 573.
Horned-Pondweed, 644, 647.
Horned-Poppy, 28, 31.
Hornwort Tribe, 218.
Hornwort, 219,
Horse-Mint, 481.
Horse-Radish, 38, 48.
Horse-shoe Vetch, 143, 168.
Hound's-tongue, 429, 442.
House-Leek, 233, 235.
Hyacinth, 609, 614.
hybrid, intermediate between two distinct species, and partaking the characters of both.

imbricated, overlapping, like the tiles of a house.
indehiscent, not opening with joints.
indigenous, native, or growing wild.
inferior, xii.
inflorescence, mode of flowering, xiii.
interruptedly pinnate, pinnate with smaller leaflets between.

inversely egg-shaped or heart-shaped, oval or heart-shaped with the base narrower than the extremity, vi.
involucre, a whorl, vii.
IRIS TRIBE, 594.
Iris, 595.
irregular, unequally divided, x.
IVY TRIBE, 286.
Ivy, 287, 288.

Jack-by-the-Hedge, 65.
JACOB'S-LADDER TRIBE, 421.
Jacob's-ladder, 422.
Jagged-Chickweed, 89, 101.
Joint-Vetch, 168.
Juniper, 576.

Kale, Sea, 38, 53.
keel, x.
kidney-shaped, vi.
Kidney-Vetch, 158.
kind, xxi.
Knapweed, 326, 354.
KNAWEL TRIBE, 535.
Knawel, 535, 536.
Knee-Holly, 611.
KNOT-GRASS TRIBE, 228, 230.
Knot-grass, 228, 539.

labiate, lipped, ix.
LABIATE TRIBE, 474.
laciniated, jagged.
Lady's-fingers, 142, 158.
Lady's-mantle, 175, 194.
Lady's-slipper, 594.
Lady's-smock, 55
Lady's-tresses, 591.
Lamb's-Lettuce, 313.
lamina, a plate, the broad part of a leaf.
Larkspur, 4, 20.
Lavender, Sea, 523, 524.
leaflet, a single portion of a compound leaf.
leaves, various forms of, iv.
legume, a long pod without a partition, xii.
Lent-Lily, 601.
Leopard's-bane, 328, 372.
Lesser Celandine, 3, 11.
Lettuce, 324, 337.
ligulate, strap-shaped.
LILY TRIBE, 607.
Lily-of-the-Valley, 609, 611.
limb, the expanded part of a petal, ix.
LIME TRIBE, 115.
Lime, 116.
Linden, 116.
linear, very narrow, with the edges parallel, vi.

Ling, 394, 398.
Linnæa, 296, 301.
Liparis, 594.
Livelong, 236.
lobe, lobed, v.
LOBELIA TRIBE, 388.
Lobelia, 388.
London-Pride, 242.
London-Rocket, 63.
Loosestrife, 511, 518.
LOOSESTRIFE PURPLE, TRIBE, 219.
Loosestrife, Purple, 219, 221.
Lords-and-Ladies, 640.
Lousewort, 455, 464.
Lovage, 251, 272.
Lucerne, 150.
Lungwort, 428, 431.
lyrate leaf, a pinnatifid leaf with a rounded terminal lobe, and smaller divisions near the base.

MADDER TRIBE, 302.
Madder, 303.
Madder, Field, 303, 309.
Madwort, 429, 442.
MALLOW TRIBE, 110.
Mallow, Marsh, 111, 114.
Mallow, Tree, 111, 114.
Mallow, 111.
Man-Orchis, 593.
MAPLE TRIBE, 121.
Maple, 122, 123.
marcescent, withering.
MARE'S-TAIL TRIBE, 215.
Mare's-tail, 215.
Marigold, Corn, 376.
Marigold, Marsh, 3, 17.
Marjoram, 476, 484.
Marsh-Cinquefoil, 174, 189.
Marsh-Mallow, 111, 114.
Marsh-Marigold, 3, 17.
Marsh-Pennywort, 254.
Marsh-Trefoil, 420.
Marsh-wort, 250, 261.
MAST-BEARING GROUP, 571.
May, 206.
May-weed, 378.
Meadow-Rue, 3, 6.
MEADOW-SAFFRON TRIBE, 620
Meadow-Saffron, 621.
Meadow-Saxifrage, 286.
MEADOW-SWEET GROUP, 173.
Meadow-sweet, 173, 181.
Medick, 141, 149.
Medlar, 177, 206.
medullary, belonging to or connected with *medulla*, the pith.
Melilot, 142, 151.
membranous, membranaceous, having the texture of a membrane or parchment.

Menziesia, 394, 398.
Mercury, 553, 555.
Meu, 272.
Mezereon, 544.
  midrib, the principal vein of a leaf.
Mignonette, 72.
Milfoil, 381.
Milfoil, Water, 215, 216.
Milk-Thistle, 324, 337.
Milk-Vetch, 142, 160.
Milkwort Tribe, 83.
Milkwort, 83.
Milkwort, Sea, 511, 520.
Mint, 476, 481.
Mistletoe Tribe, 292.
Mistletoe, 293, 294.
Mithridate-Mustard, 40
Moneywort, 518.
Moneywort, Cornish, 455, 468.
  moniliform, having the appearance of a necklace.
Monk's-hood, 4, 21.
  monochlamydeous, having a single perianth.
  monocotyledonous, xiii. 578.
  monœcious plants are those which have the stamens and pistils in separate flowers, but on the same plant.
Moschatel, 287, 289.
Motherwort, 476, 488.
Mountain-Ash, 204.
Mountain-Avens, 174, 183.
Mountain-Sorrel, 538, 543.
Mouse-ear, 438.
Mouse-ear-Chickweed, 89, 105.
Mouse-tail, 3, 13.
Mudwort, 454, 461.
Mugwort, 327, 361.
Mullein, 455, 472.
  muscology, the study of Mosses.
Musk-Mallow, 113.
Musk-Thistle, 348.
Mustard, 40, 70.
Mustard, Garlic, 39.
Mustard, Hedge, 39, 62.
Mustard, Treacle, 39, 66.
Mustard, Mithridate, 40.
Mustard, Tower, 39, 59.

Narcissus, 601, 602.
Navew, 66.
  nectary, any distinct organ in a flower containing honey, xiii.
Nettle Tribe, 559.
Nettle, 560, 561.
Nettle, Dead, 477, 492.
Nettle, Hemp, 477, 491.
Nightshade Tribe, 442.
Nightshade, 444, 445.
Nightshade, Deadly, 444, 447.
Nightshade, Enchanter's, 209, 212.
Nipplewort, 325, 343.
Nonsuch, 149.
Nottingham-Catchfly, 95.
  nut, a seed contained in a hard dry shell, xii.

Oak, 572.
  obcordate, inversely heart-shaped.
  oblong, vi.
  obovate, inversely egg-shaped.
Oleaster Tribe, 543.
Olive Tribe, 407.
  opposite, iv.
Orache, 529, 532.
  orbicular, round.
Orchideous Tribe, 582.
Orchis, 583
Orchis, Butterfly, 587.
Orchis, Bee, Fly, Spider, Monkey, Lizard, &c. 592.
Orchis, Man, 593.
Orchis, Sweet-scented, 587.
Orpine, 236.
Osier. See *Willow*.
  ovary, or germen, the lower part of the pistil, xi.
  ovule, the embryo seed.
Ox-eye, 329, 376.
Ox-lip, 513.
Ox-tongue, 323, 331.

Paigle, 513.
  paleaceous, chaffy.
  palmate, divided into five or more narrow lobes, v.
  panicle, xiii.
Pansy, 78.
  papilionaceous, butterfly-shaped, x.
  pappus, a feathery appendage to the seed, viii.
  parasitic, growing on another living vegetable.
  parenchyma, cellular tissue.
Parnassus, Grass of, 81.
Parsley, 250, 259.
Parsley, Beaked, 253, 281.
Parsley, Bur, 252, 279.
Parsley, Fool's, 251, 270.
Parsley, Hedge, 252, 279.
Parsley-Piert, 196.
Parsley, Stone, 250, 262.
Parsnep, 252, 275.
Parsnep, Cow, 252, 276.
Parsnep, Water, 250, 266.
  parted, deeply divided.
  partial, xiv.
Pasque-flower, 8.
  patent, spreading.
Pea Tribe, 139.

Pea, Everlasting, 164.
Pear, 202.
Pearl-wort, 89, 98.
  pectinate, divided like the teeth of a comb.
  pedate, palmate with the outer lobes divided, v.
  pedicel, the stalk of a flower in compound inflorescence.
  peduncle, a flower-stalk.
Pellitory, 560, 562.
  peltate, circular, with the stalk in the centre, v.
Penny-Cress, 37, 40.
Penny-royal, 482.
Pennywort, 233, 234.
Pennywort, Marsh, 254
Peony, 4, 22.
Pepper-mint, 483.
Pepper-Saxifrage, 251, 272.
Pepper, Water, 541.
Pepperwort, 37, 44.
  perennial, lasting many years.
  perfoliate, having a stem passing through a pair of leaves, v.
  perianth, a name sometimes given to the calyx or corolla, x.
  pericarp, or fruit, the seed with its covering, xii.
PERIWINKLE TRIBE, 410.
Periwinkle, 411.
PERSICARIA TRIBE, 537.
Persicaria, 538.
  persistent, not falling off, opposed to caducous.
  personate, ix.
  petaloid, petal-like.
  petals, the inner leaves of a flower.
PETALOIDEÆ, 578.
  petiole, a leaf-stalk.
  petiolate, having a leaf-stalk.
Petty-whin, 145.
  phænogamous, furnished with evident stamens and pistils.
Pheasant's-Eye, 3, 8.
  phycology, the study of seaweeds.
Pig-nut, 264.
Pimpernel, 511, 516.
Pimpernel, Yellow, 518.
PINK TRIBE, 88.
Pink, 88, 90.
  pinnate, divided like a feather, v.
  pinnatifid, lobed in a pinnate manner, v.
  pistil, xi.
  pistiliferous, bearing pistils.
PLANTAIN TRIBE, 524.
Plantain, 525.
Ploughman's-Spikenard, 328, 373.
PLUM GROUP, 178.
Plum, 173, 178.
Plume-Thistle, 326, 349.
  plumule, the bud contained in a seed, xii.
  pod. See *legume*.
  pollen, x.
  poly, many, as polypetalous, &c.
  pome, an apple.
POND-WEED TRIBE, 644.
Pond-weed, 644.
Poor-man's Weather-glass, 517.
Poplar, 566.
POPPY TRIBE, 27.
Poppy, 28.
Poppy, Horned, 28, 30.
Poppy, Welsh, 28, 31.
  pore, a small hole, xii.
  pouch, a short pod with a partition, 36.
  premorse, bitten off.
  prickle, a sharp point not having a woody centre.
PRIMROSE TRIBE, 510.
Primrose, 511, 513.
Primrose, Evening, 209, 212.
Privet, 407, 408.
  prostrate, iv.
  pseudo, false.
  pubescent, downy.
PURPLE-LOOSESTRIFE TRIBE, 219.
Purple-Loosestrife, 219, 221.
PURSLANE TRIBE, 226.
Purslane, Sea, 89, 104.
Purslane, Water, 220, 221.

Queen-of-the-Meadows, 181.
Quicken-tree, 204
  quinate, growing in fives, v.

  raceme, the same as a cluster.
  rachis, the stalk of a fern.
  radiate, a term applied to those compound flowers the outer florets of which are larger than those of the disk.
  radical, springing from the root, iv.
  radicle, the embryo root.
Radish, 40, 72,
Radish, Horse, or Water, 48.
Ragged-Robin, 95.
Ragwort, 328, 369.
Rampion, 383, 386.
Ramsons, 618.
Rape, 69.
Raspberry, 192.
  ray, the outer florets of a compound flower, ix.
  receptacle, xiii.
  reflexed, bent back.
Red-rattle, 455, 464.
Red-Robin, 96.
REED-MACE TRIBE, 635.

Reed-mace, 637.
  regular, equally divided, ix.
Rest-harrow, 141. 149.
  ringent, gaping.
ROCKET TRIBE, 72.
Rocket, 40, 71.
Rocket, Dyer's, 72.
Rocket, London, 63.
Rocket, Sea, 38, 52.
Rocket, Yellow, 59.
Rock-Cress, 39, 58.
Rock-Rose, 75.
  root, iii.
ROSE GROUP, 176.
ROSE TRIBE, 171
Rose, 177, 199.
Rose-Bay, 209.
Rose-root, 236.
  rostrate, beaked.
  rotate, the same as wheel-shaped.
  rounded, vi.
Rowan-tree, 204.
  runcinate, pinnatifid with the lobes pointing backwards.
  runner, the same as a scion.
Rupture-wort, 228, 229.
RUSH TRIBE, 622.
Rush, 623.
Rush, Flowering, 630.

Saffron-Crocus, 598.
Sage, 475, 480.
  sagittate, arrow-shaped.
Saint-foin, 144, 169.
Salad-Burnet, 198.
  saline, abounding in salt.
Sallow. See *Willow*.
Sallow-Thorn, 544.
Salsafy, 329.
Saltwort, 529, 535.
  salver-shaped, ix.
  samara, the winged seed of the *Ash*, *Sycamore*, &c.
Samphire, 252, 272.
Samphire, Golden, 374.
SANDAL-WOOD TRIBE, 516.
Sandwort-Spurrey, 228, 231
Sandwort, 89, 104.
Sanicle, 219, 255.
  sapwood, in exogenous trees the layers of wood next the bark.
Satin-flower, 101.
Sauce-alone, 65.
Saw-wort, 325, 346.
SAXIFRAGE TRIBE, 241.
Saxifrage, 211, 212.
Saxifrage, Beaked, 282.
Saxifrage, Bur, 279.
Saxifrage, Burnet, 250, 265
Saxifrage, Golden, 241, 245.
Saxifrage, Hedge, 279.
Saxifrage, Mountain-Meadow, 2 6.
Saxifrage, Pepper, 251, 272.
Scabious, 315, 316.
Scabious, Sheep's, 383, 387.
  scabrous, rough to the touch.
  scandent, climbing.
  scape, a flower-stalk springing directly from the root and bearing no leaves, xiii.
  scion, a creeping shoot, iv.
Scorpion-Grass, 429, 438.
Scottish Asphodel, 621, 622.
Scotch Thistle, 326, 351.
Scurvy-Grass, 38, 46.
Sea-Blite, 529.
Sea-Buckthorn, 541.
SEA-HEATH TRIBE, 84.
Sea-Heath, 85, 86.
Sea-Holly, 255.
Sea-Kale, 38, 53.
Sea-Lavender, 523, 524
Sea-Milkwort, 511, 520.
Sea-Purslane, 89, 104.
Sea-Rocket, 38, 52.
  secund, all arranged on one side.
  seed, xii.
Self-heal, 478, 502.
  seminal, relating to the seed.
  sepals, calyx-leaves.
  serrate, saw-edged, v.
Service-tree, 202.
  sessile, sitting, destitute of a stalk v.
  setaceous, bristly.
Shamrock, 133, 152.
Sheep's-bit, 387.
Sheep's-Scabious, 383, 387.
Sheep's-Sorrel, 543.
Shepherd's-Needle, 253, 281.
Shepherd's-Purse, 37, 41.
Shoreweed, 525, 527.
  silicle, a short pod with a partition, 36.
  silique, a long pod with a partition, 36.
  silver-grain, in exogenous trees, the rays communicating between the pith and bark.
Silver-weed, 185.
  simple, iv. xiii.
  sinuous, wavy, like the edge of an oak-leaf.
Skull-cap, 478, 502.
Sloe, 178.
Smallage, 258.
Smooth Gromwell, 428, 433
Snake's-head, 620.
Snakeweed, 538.
Snapdragon, 451, 457.
Sneeze-wort, 382.
Snowdrop, 602, 603.

Snowflake, 602, 604.
Soapwort, 88, 92.
Solomon's-Seal, 609, 612.
Sorrel, 543.
Sorrel, Mountain, 538, 543.
Sorrel, Wood, 132.
Sow-bread, 511, 516.
Sow-Thistle, 324, 337.
spathulate, oblong, but widening towards the end.
Spear-wort, 10.
species, xxi.
specific name, xxii.
Speedwell, 455, 469.
Spider-Orchis, 592.
Spider-wort, 611.
Spignel, 251, 272.
spike, xiii.
spindle-shaped, cylindrical, but tapering to a point, like a carrot, iii.
Spikenard, Ploughman's, 328, 373.
SPINDLE-TREE TRIBE, 133.
Spindle-tree, 136.
spiral vessels, minute tubes, resembling in form the spring of a bell.
spores, the seeds of ferns, mosses, &c.
Spotted Clover, 150.
spur, a sharp horn-shaped swelling.
Spur-Valerian, 311.
SPURGE TRIBE, 549.
Spurge, 553.
Spurge-Laurel, 545.
Spurrey, 229, 232.
Spurrey, Sandwort, 228, 231.
squarrose, at right angles with the stem.
Squill, 609, 616.
Squinancy-wort, 308.
stamens, x.
standard, x.
St. Dabeoc's Heath, 399.
St. John's-wort, 117, 118.
St. Patrick's-Cabbage, 242.
Star-of-Bethlehem, 609, 617.
Star-fruit, 631, 633.
Star-Thistle, 356.
Starwort, Sea, 328, 367.
Starwort, Water, 558.
stellate, star-like.
stem, iv.
sterile, barren, having stamens but no pistils.
stigma, the summit of the pistil, xi.
stipules, wings at the base of a leaf-stalk, vii.
stipe, the stem of a fern, palm, or fungus.
stipitate, stalked.
Stitchwort, 89, 101.
Stock, 39, 66.
stolon, a rooting scion.
STONECROP TRIBE, 232.
Stonecrop, 233, 236.
Stone-Parsley, 250, 262.
Stork's-bill, 124, 127.
strap-shaped, vi.
Strapwort, 228, 229.
STRAWBERRY GROUP, 173.
Strawberry, 174, 191.
Strawberry-tree, 395, 400.
style, the middle part of the pistil, xi.
subulate, awl-shaped.
Succory, 325, 344.
Sundew, 79, 80.
superior, xii.
suture, a seam or joint.
Sweet-Brier, 200.
SWEET-GALE GROUP, 568.
Sweet-Gale, 568.
SWEET-SEDGE TRIBE, 641.
Sweet-Sedge, 642.
Swine's-Cress, 53.
sword-shaped, vii.
Sycamore, 123.
syngenesious, united by the anthers.

TAMARISK TRIBE, 222.
Tamarisk, 222, 223.
TANSY GROUP, 323, 326, 356.
Tansy, 327, 359.
tap-root, the main vertical root.
Tare, 162.
TEASEL TRIBE, 315.
Teasel, 314, 315.
tendril, a twisted stalk, bearing neither leaf nor flower.
terminal, xiii.
terete, long and cylindrical.
ternate, growing in threes, v.
testa, the outer shell of a seed.
tetradynamous, having six stamens, four long and two short.
thalamus, the receptacle.
Thale-Cress, 64.
THISTLE GROUP, 323, 325, 346.
Thistle, Carline, 326, 353.
Thistle, Cotton, 325, 351.
Thistle, Milk, 337, 349.
Thistle, Musk, 326, 348.
Thistle, Plume, 326, 349.
Thistle, Scotch, 326, 351.
Thistle, Sow, 324, 337.
Thistle, Star, 356.
thorn, a sharp point, having a woody centre.
thread-like, x.
THRIFT TRIBE, 522.

Thrift, 522, 523.
throat, the upper part of a tube.
Thyme, 476, 483.
Thyme, Basil, 478, 499.
Toad-Flax, 454, 457.
Toad-Flax, Bastard, 546.
tomentose, covered with thick cotton.
toothed, v.
Tooth-wort, 450, 453.
Tormentil, 174, 188.
Tower-Mustard, 39, 59.
Traveller's-Joy, 3, 4.
Treacle-Mustard, 39, 66.
Tree-Mallow, 111, 114.
Trefoil, 142, 152
Trefoil, Bird's-foot, 142, 157.
Trefoil, Marsh, 420.
tribe, xxiii.
Trichonema, 596.
trifid, three-cleft.
trivial name, xxii.
True-Love-Knot, 607.
trumpet-shaped, ix.
truncate, ending abruptly, as if cut off.
tuber, tuberous, iii.
TULIP GROUP, 610.
Tulip, 610, 620.
Turnip, 69.
Tutsan, 118.
Twayblade, 589.

umbel, xiv.
umbellate, growing in an umbel.
UMBELLIFEROUS TRIBE, 246.
uncinate, hooked.
unilateral, one-sided.
urceolate, pitcher-shaped.

VALERIAN TRIBE, 309.
Valerian, 311.
Valerian, Greek, 422.
valvate, opening with valves.
valves, xii.
varieties, xxii.
vascular, containing vessels.
Venus'-Comb, 281.
vermicular, worm-like.
vernation, the state of leaves in bud.
verrucose, warty.
verticillate, whorled.
VERVAIN TRIBE, 504
Vervain, 504.
vesicle, a bladder.
VETCH GROUP, 143.
Vetch, 143, 161.
Vetch, Bitter, 143, 166.
Vetch, Horse-shoe, 143, 168.
Vetch, Milk, 142, 160.
Vetchling, 143, 164.
Villarsia, 414, 420.
villous, shaggy.
VIOLET TRIBE, 76.
Violet, 76.
Violet, Water, 511, 515
Viper's-Bugloss, 428, 429.
viscous, clammy.
viviparous, producing young plants instead of seeds.

Wake-Robin, 640.
Wall-Cress, 64.
Wall-flower, 39, 66.
Wall-Pellitory, 562.
Wall-Pepper, 238.
Wart-Cress, 38, 53.
Water-Blinks, 227.
Water-Cress, 61.
Water-Dropwort, 251, 269.
Water-Elder, 297.
Water-Hemlock, 268.
WATER-LILY TRIBE, 25.
Water-Lily, 26.
Water-Milfoil, 215, 216.
WATER-PLANTAIN TRIBE, 631.
Water-Plantain, 631.
Water-Parsnep, 250, 266.
Water-Pepper, 541.
Water-Purslane, 220, 221.
Water-Radish, 48.
Water-Soldier, 582.
WATER-STARWORT TRIBE, 558.
Water-Starwort, 558.
Water-Violet, 511, 515.
WATERWORT TRIBE, 86.
Waterwort, 86.
wavy, v.
Wayfaring-Tree, 296.
Weasel-snout, 477, 490.
Weld, 72.
Welsh-Poppy, 28, 30.
wheel-shaped, ix.
Whin, 144.
Whinberry, 390.
Whin, Petty, 145
White-beam Tree, 206.
White-Bryony, 225.
White-Horehound, 178, 498.
White-rot, 249, 254.
White-thorn, 206.
White Water Lily, 26.
Whitlow-Grass, 38, 50.
Whortleberry, 390.
whorl, three or more leaves springing from the same point on a stem, iv.
whorl, growing in a whorl, iv.
Wild-Balm, 475, 501.
Wild Basil, 478, 499
Wild-Chamomile, 329, 379.

Wild-Sage, 475, 480.
Wild-Succory, 344.
Wild-Thyme, 483.
WILLOW GROUP, 566.
Willow, 566.
WILLOW-HERB TRIBE, 208.
Willow-herb, 202.
Willow, Flowering, 209.
Willowstrife, 221.
Wind-flower, 3, 7.
wings, a name often given to any leaf-like expansion, x.
Winter-Cress, 39, 59.
Winter-green, 402.
Winter-green, Chickweed, 511, 519.
Woad-waxen, 146.
Wolf's-bane, 21.
Wood-Anemone, 7.
WOODBINE TRIBE, 295.
Woodbine, 299.
Woodruff, 303, 307.
Woodrush, 623, 626.
Wood-Sage, 486.
WOOD-SORREL TRIBE, 131.
Wood-Sorrel, 132.
Wormseed, 66.
Wormwood, 327, 360.
Woundwort, 477, 493.

YAM TRIBE, 604.
Yarrow, 329, 381.
Yellow-Cress, 48, 62.
Yellow Dead-nettle, 490.
Yellow Pimpernel, 518.
Yellow-rattle, 455, 466.
Yellow-Rocket, 59.
Yellow Water-Lily, 26, 27.
Yellow-weed, 72.
Yellow-wort, 414, 419.
Yew, 577.

LATIN INDEX.

Acer, 122, 123.
Aceras, 593.
ACERACEÆ, 121.
Achillea, 329, 381.
Aconitum, 4, 21.
Acorus, 642.
ACOTYLEDONES, xxi.
Actæa, 4, 21.
Actinocarpus, 631, 633.
Adonis, 3, 8.
Adoxa, 287, 289.
Ægopodium, 250, 262.
Æthusa, 251, 270.
Agraphis, 609, 614.
Agrimonia, 175, 194.
Agrostemma, 89, 98.
Ajuga, 476, 485.
Alchemilla, 175, 194.
Alisma, 631.
ALISMACEÆ, 631.
Alliaria, 39, 65.
Allium, 609, 618.
Alnus, 569.
ALSINEÆ, 89.
Althæa, 111, 114.
AMARYLLIDACEÆ, 598.
AMENTACEÆ, 565.
AMYGDALEÆ, 171.
Anacharis, 580.
Anagallis, 511, 516.
Anchusa, 429, 437.
Andromeda, 395, 400.
Anemone, 3, 7.
Angelica, 252, 274.
Antennaria, 327, 361.
Anthemis, 329, 379.
Anthericum, 611.
Anthriscus, 253, 281.
Anthyllis, 142, 158.
Antirrhinum, 454, 457.
Apargia, 324, 332.
Apium, 250, 258.
APOCYNACEÆ, 410.
AQUIFOLIACEÆ, 405.
Aquilegia, 4, 20.
Arabis, 39, 58.
ARACEÆ, 639.
ARALIACEÆ, 286.
Arbutus, 395, 400.
Arctium, 325, 346.
Arctostaphylos, 395, 401.
Arenaria, 89, 104.
Aristolochia, 547, 548.
ARISTOLOCHIACEÆ, 547.
Armeria, 522, 523.
Armoracia, 38, 48.
Artemisia, 327, 360.
Arthrolobium, 168.
Arum, 640.
Asarum, 548.
ASPARAGEÆ, 608.
Asparagus, 608, 611.
Asperugo, 429, 442.
Asperula, 303, 307.
Aster, 328, 367.
Astragalus, 142, 160.
Atriplex, 529, 532.
Atropa, 444, 447.
Azalea, 394, 400.

Ballota, 476, 487.
BALSAMINACEÆ, 129.
Barbarea, 39, 59.
Bartsia, 455, 466.
Bellis, 328, 375.
BERBERIDACEÆ, 22.
Berberis, 23, 24.
Beta, 529, 534.
Betonica, 477, 493.
Betula, 569.
BETULINEÆ, 569.
Bidens, 326, 356.
BORAGINACEÆ, 427.
Borago, 429, 435.
Brassica, 40, 66.
Bryonia, 225.
Bunium, 250, 263.
Bupleurum, 251, 268.
BUTOMACEÆ, 629.
Butomus, 630.
Buxus, 553, 556.

Cakile, 38, 52.
Calamintha, 478, 499.
CALLITRICHACEÆ, 558.
Callitriche, 558.
Calluna, 394, 398.
Caltha, 3, 17.
CALYCIFLORÆ, xx. 135.
Calystegia, 424.
Campanula, 382, 383.
CAMPANULACEÆ, 382.
CAPRIFOLIACEÆ, 295.
Capsella, 37, 41.
Cardamine, 38, 55.
Carduus, 326, 348.
Carlina, 326, 353.
Carpinus, 573.
Carum, 250, 262.
CARYOPHYLLACEÆ, 87.
Castanea, 571.
Caucalis, 252, 279.
CELASTRACEÆ, 133.
Centaurea, 326, 354.
Centranthus, 311.
Centunculus, 511, 519.
Cerastium, 89, 105.
CERATOPHYLLACEÆ, 218.
Ceratophyllum, 219.
Chærophyllum, 253, 284.
Cheiranthus, 39, 66.
Chelidonium, 28, 31.
CHENOPODIACEÆ, 528.
Chenopodium, 529, 530.
Cherleria, 90, 107.
Chironia, 417.
Chlora, 414, 419.
Chrysanthemum, 329, 376.
Chrysocoma, 326, 358.
Chrysosplenium, 241, 245.

Cicendia, 413, 418.
CICHORACEÆ, 323, 329.
Cichorium, 325, 344.
Cicuta, 249, 257.
Circæa, 209, 212.
CISTACEÆ, 74.
Clematis, 3, 4.
Cnicus, 326, 349.
Cochlearia, 38, 46.
Colchicum, 621.
Comarum, 174, 189.
COMPOSITÆ, 319.
CONIFERÆ, 574.
Conium, 249, 257.
Convallaria, 609, 611.
CONVOLVULACEÆ, 423.
Convolvulus, 424.
Corallorhiza, 593.
Coriandrum, 286.
CORNACEÆ, 289.
Cornus, 291.
COROLLIFLORÆ, xx. 292.
Corrigiola, 228, 229.
Corydalis, 33.
Corylus, 573.
Cotyledon, 233, 234.
Crambe, 38, 53.
CRASSULACEÆ, 232.
Cratægus, 178, 206.
Crepis, 324, 338.
Crithmum, 252, 272.
Crocus, 595, 598.
CRUCIFERÆ, 36.
CUCURBITACEÆ, 224.
CUPULIFERÆ, 571.
Cuscuta, 424, 426.
Cyclamen, 511, 516.
CYNAROCEPHALÆ, 323, 325, 346.
Cynoglossum, 429, 442.
Cypripedium, 594.

Daphne, 545.
Daucus, 252, 278.
Delphinium, 4, 20.
Dentaria, 38, 55.
Dianthus, 88, 90.
DICOTYLEDONES, xx.
Digitalis, 454, 456.
DIOSCORACEÆ, 604.
Diotis, 327, 358.
Diplotaxis, 40, 71.
DIPSACEÆ, 314.
Dipsacus, 314, 315.
Doronicum, 328, 372.
Draba, 38, 50.
Drosera, 79, 80.
DROSERACEÆ, 79
Dryas, 174, 183.

Echium, 428, 429.
Elatine, 86.
ELATINACEÆ, 86.
ELEAGNACEÆ, 543.
EMPETRACEÆ, 548.
Empetrum, 549.
Epilobium, 209.
Epimedium, 23, 24.
Epipactis, 592.
Eranthis, 17.
Erica, 394, 395.
ERICACEÆ, 392.
Erigeron, 328, 367.
Erodium, 124, 127.
Eryngium, 249, 255.
Erysimum, 39, 66.
Erythræa, 413, 416.
Euonymus, 136.
Eupatorium, 326, 357.
Euphorbia, 553.
EUPHORBIACEÆ, 549.
Euphrasia, 455, 467.

Fagus, 571.
Fedia, 311, 313.
Filago, 327, 363.
Fœniculum, 251, 271.
Fragaria, 174, 191.
Frankenia, 85, 86.
FRANKENIACEÆ, 84.
Fraxinus, 408, 410.
Fritillaria, 611, 620.
Fumaria, 33, 34.
FUMARIACEÆ, 33.

Gagea, 610, 620.
Galanthus, 602, 603.
Galeobdolon, 477, 490.
Galeopsis, 477, 491.
Galium, 303, 304.
Genista, 141, 145.
Gentiana, 413, 414.
GENTIANACEÆ, 412.
GERANIACEÆ, 123.
Geranium, 124.
Geum, 174, 184.
Glaucium, 28, 31.
Glaux, 511, 520.
Glechoma, 498.
GLUMACEÆ, xxi.
Gnaphalium, 327, 362.
Goodyera, 593.
GROSSULARIACEÆ, 239.
Gymnadenia, 587.

Habenaria, 587.
HALORAGACEÆ, 215.
Hedera, 287, 288.
HEDYSAREÆ, 143.
Helianthemum, 75.
Helleborus,
Helminthia, 323, 331.
Helosciadium, 250, 261.
Heracleum, 252, 276.
Herniaria, 228, 229.
Hieracium, 324, 340.
Hippocrepis, 143, 168.
Hippophaë, 544.
Hippuris, 215.
Holosteum, 89, 101.
Honckenya, 89, 104
Hottonia, 511, 515.
Humulus, 561, 563.
Hutchinsia, 37, 43.
Hyacinthus, 615.
HYDROCHARIDACEÆ, 579.
Hydrocharis, 581, 582.
Hydrocotyle, 249, 254.
Hyoscyamus, 444, 447.
HYPERICACEÆ, 117.
Hypericum, 117, 118.
Hypochæris, 324, 331.

Ilex, 406, 407.
Illecebrum, 228, 230.
Impatiens, 131.
Inula, 328, 373.
IRIDACEÆ, 594.
Iris, 595.
Isnardia, 209, 212.

Jasione, 383, 387.
JUNCAGINACEÆ, 634.
JUNCACEÆ, 622.
Juncus, 623.
Juniperus, 576.

Knautia, 315, 318.

LABIATÆ, 474.
Lactuca, 324, 337.
Lamium, 477, 492.
Lapsana, 325, 343.
Lathræa, 450, 453.
Lathyrus, 143, 164.
Lavatera, 111, 114.
LEGUMINOSÆ, 139.
Lemna, 643.
LENTIBULARIACEÆ, 506.
Leontodon, 325, 342.
Leonurus, 476, 488.
Lepidium, 37, 44.
Leucojum, 602, 604.
Ligusticum, 251, 272.
Ligustrum, 407, 408.
LILIACEÆ, 607.
Limosella, 454, 461.
Linaria, 454, 457.
LINACEÆ, 107.
Linnæa, 296, 301,

Linum, 108.
Liparis, 594.
Listera, 589.
Lithospermum, 428, 432.
Littorella, 525, 527.
Lobelia, 388.
LOBELIACEÆ, 383.
Lonicera, 296, 299.
LORANTHACEÆ, 292.
LOTEÆ, 141.
Lotus, 142, 157.
Luzula, 623, 626.
Lychnis, 88, 95.
Lycopsis, 429, 436.
Lycopus, 475, 478.
Lysimachia, 511, 518.
LYTHRACEÆ, 219.
Lythrum, 219, 221.

Malachium, 90, 106.
Malaxis, 594.
Malva, 111.
MALVACEÆ, 110.
Marrubium, 478, 498.
Matricaria, 329, 377.
Matthiola, 39, 66.
Meconopsis, 28, 30.
Medicago, 144, 149.
Melampyrum, 454, 462.
MELANTHACEÆ, 620.
Melilotus, 142, 151.
Melittis, 478, 501.
Mentha, 476, 484.
Menyanthes, 414, 420.
Menziesia, 394, 398.
Mercurialis, 553, 555.
Mertensia, 428, 433.
Mespilus, 177, 206.
Meum, 251, 272.
Mœnchia, 89, 100.
MONOCHLAMYDEÆ, xxi. 528.
MONOCOTYLEDONES, xxi. 578.
Monotropa, 402, 405.
MONOTROPACEÆ, 402.
Montia, 227.
Myosotis, 429, 438.
Myosurus, 3, 13.
Myrica, 568.
MYRICEÆ, 568.
Myriophyllum, 215, 216.
Myrrhis, 253, 284.

NAIADACEÆ, 644.
Narcissus, 604, 602.
Narthecium, 623, 629.
Nasturtium, 39, 61.
Neottia, 591.
Nepeta, 477, 497.
Nuphar, 26, 27.
Nymphæa, 26.
NYMPHÆACEÆ, 25.

Œnanthe, 251, 268.
Œnothera, 209, 212.
OLEACEÆ, 407.
ONAGRACEÆ, 208.
Onobrychis, 144, 169.
Ononis, 141, 148.
Onopordum, 326, 351.
Ophrys, 592.
ORCHIDACEÆ, 582.
Orchis, 585.
Origanum, 476, 484.
Ornithogalum, 609, 616.
Ornithopus, 143, 168.
OROBANCHACEÆ, 449.
Orobanche, 450.
Orobus, 143, 166.
ORONTIACEÆ, 641.
OXALIDACEÆ, 131.
Oxalis, 132.
Oxyria, 538, 543.
Oxytropis, 142, 158.

Pæonia, 4, 22.
Papaver, 28.
PAPAVERACEÆ, 27.
Parietaria, 560, 562.
Paris, 607.
Parnassia, 80, 81.
PARNASSIEÆ, 80.
PARONYCHIACEÆ, 228.
Pastinaca, 252, 275.
Pedicularis, 455, 464.
Peplis, 220, 221.
PETALOIDEÆ, xxi. 578.
Petasites, 327, 364.
Petroselinum, 250, 259.
Peucedanum, 286.
Physospermum, 284.
Phyteuma, 383, 386.
Picris, 324, 331.
Pimpinella, 250, 265.
Pinguicula, 507.
Pinus, 575.
PISTIACEÆ, 643.
PLANTAGINACEÆ, 524.
Plantago, 525.
PLUMBAGINACEÆ, 522.
POLEMONIACEÆ, 421.
Polemonium, 422.
Polycarpon, 228, 230.
Polygala, 83.
POLYGALACEÆ, 83.
POLYGONACEÆ, 537.
Polygonatum, 609, 612.
Polygonum, 538.
POMEÆ, 177.
Populus, 566.
PORTULACEÆ, 226.
Potamogeton, 644, 645.
Potentilla, 174, 185.
Poterium, 176, 198.
Primula, 511, 513.
PRIMULACEÆ, 510.
Prunella, 478, 502.
Prunus, 173, 178.
Pulicaria, 328, 374.
Pulmonaria, 428, 431.
Pyrethrum, 378.
Pyrola, 402.
Pyrus, 177, 202.

Quercus, 572.

RADIATÆ, 323, 327, 366.
Radiola, 108, 110.
RANUNCULACEÆ, 2.
Ranunculus, 3, 8.
Raphanus, 40, 72.
Reseda, 72.
RESEDACEÆ, 72.
RHAMNACEÆ, 136.
Rhamnus, 138, 139.
Rhinanthus, 455, 466.
Ribes, 239, 240.
Rosa, 177, 199.
ROSACEÆ, 171.
ROSIDÆ, 176.
Rubia, 303.
RUBIACEÆ, 302.
Rubus, 175, 192.
Rumex, 538, 541.
Ruppia, 644, 646.
Ruscus, 609, 611.

Sagina, 89, 98.
Sagittaria, 631, 633.
Salicornia, 530, 535.
SALICINEÆ, 566.
Salix, 566.
Salsola, 529, 535.
Salvia, 475, 480.
Sambucus, 295, 296.
Samolus, 512, 522.
Sanguisorba, 175, 196.
SANGUISORBIDÆ, 175.
Sanicula, 249, 255.
SANTALACEÆ, 546.
Saponaria, 88, 92.
Sarothamnus, 144, 148.
Saussurea, 325, 346.
Saxifraga, 241, 242.
SAXIFRAGACEÆ, 241.
Scabiosa, 315, 316.
Scandix, 253, 281.
Scheuzeria, 635.

Schrophularia, 454, 460.
SCHROPHULARIACEÆ, 453.
Scilla, 609, 616.
SCILLEÆ, 609.
SCLERANTHACEÆ, 535.
Scleranthus, 535, 536.
Scutellaria, 478, 502.
Sedum, 233, 236.
Sempervivum 233,235.
Senebiera, 38, 53.
Senecio, 328, 369.
Serratula, 325, 346.
Seseli, 286.
Sherardia, 303, 309.
Sibbaldia, 174, 189.
Sibthorpia, 455, 468.
Silaus, 251, 272.
Silene, 88, 92.
SILENEÆ, 88.
Sinapis, 40, 70.
Sison, 250, 262.
Sisymbrium, 39, 62.
Sium, 250, 266.
Smyrnium, 249, 257.
SOLANACEÆ, 442.
Solanum, 444, 445.
Solidago, 328, 368.
Sonchus, 324, 337.
Sparganium, 637.
Specularia, 386.
Spergula, 229, 232.
Spergularia, 228, 231.
Spiræa, 173, 181.
SPIREIDÆ, 173.
Stachys, 477, 493.
Statice, 523, 524.
Stellaria, 89, 101.
Stratiotes, 582.
Suæda, 529, 532.
Subularia, 38, 49.
Symphytum, 428, 433.

TAMARICACEÆ, 222.
Tamarix, 222 223.
Tamus, 604, 605.
Tanacetum, 327, 359.
Taxus, 577.
Teesdalia, 37, 43.
Teucrium, 476, 486.
THALAMIFLORÆ, xx. 2.
Thalictrum, 3, 6.
Thesium, 546, 547.
Thlaspi, 37. 40.
Thrincia, 324, 333.
THYMELACEÆ, 544.
Thymus, 476, 483.
Tilia, 116.
TILIACEÆ, 115.
Tillæa, 233.
Tofieldia, 621, 622.
Torilis, 252, 279.
Tormentilla, 174, 188.
Tragopogon, 323, 329.
Trichonema, 595, 596.
Trientalis, 511, 519.
Trifolium, 142, 152.
Triglochin, 634.
Trigonella, 142, 152.
TRILLIACEÆ, 606.
Trinia, 285.
Trollius, 3, 14.
TUBIFLORÆ, 323, 326, 356.
Tulipa, 610, 620.
TULIPEÆ, 610.
Turritis, 39, 59.
Tussilago, 327, 366.
Typha, 637.
TYPHACEÆ, 635.

Ulex, 141, 144.
ULMACEÆ, 564.
Ulmus, 564.
UMBELLIFERÆ, 245.
Urtica, 560, 561.
URTICACEÆ, 559.
Utricularia, 507, 508

VACCINACEÆ, 389.
Vaccinium, 390.
Valeriana, 311.
VALERIANACEÆ, 309.
Verbascum. 455, 472.
Verbena, 504.
VERBENACEÆ, 504.
Veronica, 455, 462.
Viburnum, 296.
Vicia, 143, 161.
VICIEÆ, 143.
Villarsia, 414, 420.
Vinca, 411.
Viola, 76.
VIOLACEÆ, 76.
Viscum, 293, 294.

Zannichellia, 644, 646.
Zostera, 645, 648.

PLANT NAMES.

The Latin names of plants used in other modern floras are not always the same as in this.

The following list shows where different names are used in Sir J. D. Hooker's "Student's Flora" (3rd edition). The names in *italics* are those of the "Student's Flora." The numbers following the names used in this book refer to the pages.

Agrostemma Githago, 98	*Githago segetum.*
Alliaria officinalis, 65	*Siysmbrium Alliaria.*
Anacharis alsinastrum, 580	*Elodea canadensis.*
Anchusa arvensis	Lycopsis arvensis, 436.
Apargia autumnalis, 332	*Leontodon autumnalis.*
——— hispida, 332	——— *hispidus.*
Apium inundatum	Helosciadum inundatum, 261.
——— *nodiflorum*	——— nodiflorum, 261.
Arenaria Cherleri	Cherleria sedoides, 107.
——— *peploides*	Honckeneya peploides, 104.
Armoracia amphibia, 48	*Nasturtium amphibium.*
——— rusticana, 49	*Cochlearia Armoracia.*
Arthrolobium ebracteatum, 168	*Orinthopus ebracteatus.*
Azalea procumbens, 400	*Loiseleuria procumbens.*
Brunella vulgaris	Prunella vulgaris, 502.
Calystegia Sepium, 424	*Convolvulus Sepium.*
——— Soldanella, 425	——— *Soldanella.*
Campanula hederacea, 385	*Wahlenbergia hederacea.*
——— hybrida, 386	*Specularia hybrida.*
Carduus acanthoides, 349	*C. crispus.*
——— *crispus*	C. acanthoides, 349.
——— *pycnocephalus*	C. tenuiflorus, 349.
——— tenuiflorus, 349	*C. pycnocephalus.*
Carum Petroselinum	Petroselinum sativum, 260.
——— *segetum*	——— segetum, 259.
Caucalis Anthriscus	Torilis Anthriscus, 279.
——— *arvensis*	——— infesta, 279.
——— *nodosa*	——— nodosa, 280.
Cerastium quaternellum	Mœnchia erecta, 100.
Chærophyllum temulentum, 284	*C. temulum,*

Chœrophyllum temulum.........	C. temulentum, 284.
Chenopodium olidum, 530......	*C. Vulvaria.*
———— *Vulvaria*	C. olidum, 530.
Cherleria sedoides, 107..... ...	*Arenaria Cherleri.*
Chrysanthemum Parthenium ..	Matricaria Parthenium, 377.
Cochlearia Armoracia......	Armoracia rusticana, 49.
Convolvulus Sepium	Calystegia Sepium, 424.
———— *Soldanella*	————Soldanella, 425.
Cynoglossum montanum.........	C. sylvaticum, 442.
———— sylvaticum, 442...	—*montanum.*
Cytisus Scopiarius	Sarothamnus Scopiarius, 118.
Daucus gummifer	D. maritimus, 279.
——— maritimus, 279	*D. gummifer.*
Drosera intermedia	D. longifolia, 80.
——— longifolia, 80	— *intermedia.*
Elodea canadensis	Anacharis alsinastrum, 580.
Fœdia dentata, 314..............	*Valerianella dentata.*
———olitoria, 313	———— *olitoria.*
Fœniculum officinale	F. vulgare, 271.
———— vulgare, 271	—*officinale.*
Galeobdolon luteum, 490	*Lamium Galeobdolon.*
Galeopsis Speciosa	G. versicolor, 492.
——— versicolor, 492	— *speciosa.*
Githago segetum	Agrostemma Githago, 98.
Helosciadum inundatum, 261	*Apium inundatum.*
———— nodiflorum, 261	——— *nodiflorum.*
Honckeneya peploides, 104	*Arenaria peploides.*
Hypopithys multiflora	Monotropa Hypopitys, 405.
Juncus acutifolius, 625	*J. articulatus.*
——— *articulatus*	—acutifolius, 625.
——— *communis*	—conglomeratus, 623.
——— conglomeratus, 623	—*communis.*
Knautia arvensis, 318 .	*Scabiosa arvensis.*
Lactuca alpina	Mulgedium alpinum. 338
Lamium Galeobdolon	Galeobdolon luteum, 490.
————*hybridum*	L. incisum, 493.
————incisum, 493	— *hybridum.*
Leontodon autumnalis	Apargia autumnalis, 332.
——— *hirtus*............... ..	Thrincia hirta, 333.
——— *hispidus*..............	Apargia hispida, 332
——— Taraxacum, 342 ..	*Taraxacum officinale.*
Limnanthemum peltatum	Villarsia nymphœoides, 420
Listera Nidus-avis, 590	*Neottia Nidus-avis.*
Loiscleuria procumbens	Azalea procumbens. 400.
Luzula pilosa, 627	*L. vernalis.*
——— *vernalis*	L. pilosa, 627.

Lycopsis arvensis, 436	*Anchusa arvensis.*
Malachium aquaticum, 106	*Stellaria aquatica.*
Matricaria Parthenium, 377	*Chrysanthemum Parthenium.*
Melilotus alba	M. leucantha, 152.
——— leucantha, 152	— *alba.*
Mespilus germanica, 206	*Pyrus germanica.*
Mœnchia erecta, 100	*Cerastium quaternellum.*
Monotropa Hypopitys, 405	*Hypopithys multiflora.*
Mulgedium alpinum, 338	*Lactuca alpina.*
Nasturtium amphibium	Armoracia amphibia, 48.
Neottia Nidus-avis	Listera Nidus-avis, 590.
Œnanthe peucedanifolia	Œ. silaifolia, 269.
——— silaifolia, 269	— *peucedanifolia.*
Ononis arvensis, 148	*O. spinosa.*
——— *spinosa*	— arvensis, 148.
Orchis fusca, 592	*O. purpurea.*
———*purpurea*	— fusca, 592.
———*Simia*	— tephrosanthos, 592.
———tephrosanthos, 592	— *Simia.*
Ornithopus ebracteatus	Arthrolobium ebracteatum, 168.
Oxyria digyna	O. reniformis, 543.
——— reniformis, 543	— *digyna.*
Pastinaca sativa, 275	*Peucedanum sativum.*
Petroselinum sativum, 260	*Carum Petroselinum.*
———segetum, 259	——— *segetum.*
Peucedanum sativum	Pastinaca sativa, 275.
Pimpinella magna, 265	*P. major.*
——— *major*	— magna, 265.
Potentilla alpestris, 187	*P. salisburgensis.*
——— *salisburgensis*	— alpestris, 187.
——— *Sibbaldi*	Sibbaldia procumbens, 189.
——— *Tormentilla*	Tormentilla officinalis, 188.
Poterium officinale	Sanguisorbia officinalis, 196.
Prunella vulgaris, 502	*Brunella vulgaris.*
Pyrus germanica	Mespilus germanica, 206.
Radiola linoides	R. millegrana, 110.
——— millegrana, 110	— *linoides.*
Reseda alba	R. fruticulosa, 73.
——— fruticulosa, 73	— *alba.*
Sagina Linnæi	S. saxatilis, 99.
——— saxatilis, 99	— *Linnæi.*
Sanguisorbia officinalis, 196	*Poterium officinalis.*
Sarothamnus Scopiarius, 148	*Cytisus Scopiarius.*
Scabiosa arvensis	Knautia arvensis, 318.
Senecio erucifolius	S. tenuifolius, 371.

Senecio tenuifolius, 371	*S. erucifolius.*
Sibbaldia procumbens, 189	*Potentilla Sibbaldi.*
Silene anglica, 95	*S. gallica.*
———*Cucubalus*	— inflata, 93.
———*gallica*	— anglica, 95.
———inflata, 93	— *Cucubalus.*
Sisymbrium Alliaria	Alliaria officinalis, 65.
Sonchus alpinus, 338	*Lactuca alpina.*
Specularia hybrida	Campanula hybrida, 386.
Statice auriculæfolia	S. spathulata or binervosa, 524.
——— *bellidifolia*	S. reticulata or Caspia. 524.
——— reticulata or Caspia, 524	— *bellidifolia.*
———spathulata or binervosa, 524	— *auriculæfolia.*
Stellaria aquatica	Malachium aquaticum, 106.
————glauca, 103	*S. palustris.*
———— *palustris*	—glauca, 103.
Taraxacum officinale	Leontodon Taraxacum, 342.
Thrincia hirta, 333	*Leontodon hirtus.*
Torilis Anthriscus, 279	*Caucalis Anthriscus.*
——— infesta, 279	————*arvensis.*
——— nodosa, 280	————*nodosa.*
Tormentilla officinalis, 188	*Potentilla Tormentilla.*
Valerianella dentata	Fedia dentata, 314.
———— *olitoria*	———olitoria, 313.
Villarsia nymphœoides, 420	*Limnanthemum peltatum.*
Wahlenbergia hederacea	Campanula hederacea, 385.

SYNOPSIS OF NATURAL ORDERS

AS ARRANGED IN THIS BOOK.

CLASS I.—DICOTYLEDONS.

SUB-CLASS 1, "THALAMIFLORÆ."

1. Ranunculaceæ, 2.
2. Berberidaceæ 22.
3. Nymphæaceæ 25.
4. Papaveraceæ, 27.
5. Fumariaceæ, 33.
6. Cruciferæ, 36.
7. Resedaceæ, 72.
8. Cistaceæ, 74
9. Violaceæ, 76.
10. Droseraceæ, 79.
11. Polygalaceæ, 83.
12. Frankeniaceæ, 84.
13. Elatinaceæ, 86.
14. Caryophyllaceæ, 87.
    i. Sileneæ.
    ii. Alsineæ.
15. Linaceæ, 107.
16. Malvaceæ, 110.
17. Tiliaceæ, 115.
18. Hypericaceæ, 117.
19. Aceraceæ, 121.
20. Geraniaceæ, 123.
21. Balsaminaceæ, 129.
22. Oxalidaceæ, 131.

SUB-CLASS 2, "CALYCIFLORÆ."

23. Celastraceæ 133.
24. Rhamnaceæ, 136.
25. Leguminosæ 139.
26. Rosaceæ, 171.
    i. Amygdaleæ.
    ii. Spireidæ.
    iii. Potentillidæ
    iv. Sanguisorbidæ.
    v. Rosidæ.
    vi. Pomeæ
27. Onagraceæ, 208.
28. Haloragaceæ, 215.
29. Ceratophyllaceæ, 218.
30. Lythraceæ, 219.
31. Tamaricaceæ, 222.
32. Cucurbitaceæ 224.
33. Portulaceæ, 226.
34. Paronychiaceæ 228.
35. Crassulaceæ, 232.
36. Grossulariaceæ, 239.
37. Saxifrageæ, 241.
38. Umbelliferæ, 246
39. Araliaceæ, 286
40. Cornaceæ, 289.

SUB-CLASS 3, "COROLLIFLORÆ."

41. Loranthaceæ, 292.
42. Caprifoliaceæ 295.
43. Rubiaceæ 302.
44. Valerianaceæ, 309.
45. Dipsaceæ, 314.
46. Compositæ, 319.
    i. Cichoraceæ.
    ii. Cynarocephalæ.
    iii. Tubifloræ.
    iv. Radiatæ.
47. Campanulaceæ 382.
48. Lobeliaceæ, 388.
49. Vacciniaceæ 389.
50. Ericaceæ, 392.
51. Monotropaceæ 402.
52. Aquifoliaceæ, 405.
53. Oleaceæ, 407.
54. Apocynaceæ, 410.
55. Gentianaceæ, 412.
56. Polemoniaceæ, 421.
57. Convolvulaceæ, 423
58. Boraginaceæ 427.
59. Solanaceæ, 442.
60. Orobanchaceæ 449.
61. Scrophulariaceæ, 453.
62. Labiatæ, 474.
63. Verbenaceæ, 504.
64. Lentibulariaceæ, 506.
65. Primulaceæ, 51 .
66. Plumbaginaceæ, 522.
67. Plantaginaceæ, 524.

SUB-CLASS 4, "MONOCHLAMYDEÆ."

68. Chenopodiaceæ, 523.
69. Scleranthaceæ, 535
70. Polygonaceæ, 537.
71. Elæaginaceæ, 543.
72. Thymelaceæ, 544.
73. Santalaceæ, 546.
74. Aristolochiaceæ, 547.
75. Empetraceæ, 548.
76. Euphorbiaceæ, 549.
77. Callitrichaceæ, 553.
78. Urticaceæ, 559.
79. Ulmaceæ, 561.
80. Amentaceæ, 565.
    i. Salicineæ.
    ii. Myriceæ.
    iii. Betolineæ.
    iv. Cupuliferæ.
81. Coniferæ, 571.

CLASS II.—MONOCOTYLEDONS.

82. Hydrocharidaceæ, 579.
83. Orchidaceæ, 582.
84. Iridaceæ, 591.
85. Amaryllidaceæ, 593.
86. Dioscoreaceæ, 601.
87. Trilliaceæ, 605.
88. Liliaceæ, 607.
    i. Asparageæ.
    ii. Scilleæ.
    iii. Tulipeæ.
89. Melanthaceæ, 620.
90. Juncaceæ, 622.
91. Butomaceæ, 624.
92. Alismaceæ, 631.
93. Juncagineæ, 634.
94. Typhaceæ, 635.
95. Araceæ, 639.
96. Orontiaceæ, 641.
97. Pistiaceæ, 643.
98. Naiadaceæ, 644.

THE END.

APPENDIX.

GRASSES.

By C. HENRY JOHNS, M.A.

> "Consider the lilies of the field, how they grow; they toil not, neither do they spin: and yet I say unto you, That even Solomon in all his glory was not arrayed like one of these."—MATT. vi. 28, 29.

GRAMINEÆ.—GRASSES.

Glumaceous Endogens is the term given by Lindley to the great mass of herbage known as Grasses and Sedges; the meaning of which term is, that in this form of vegetation the envelope of the true flowers (i.e. the stamens and pistils), instead of consisting of a more or less regular calyx and corolla as in previous Orders, assumes the form of small green, brown, or semi-transparent chaff-like scales or bracts, generally called "glumes."

The grasses are evergreen, perennial, and annual herbs. *Root-stock* fibrous, or bulbous; *stem* cylindrical or two-edged, usually hollow (except at the joints, where there is a compact impervious diaphragm), covered with a coat of silex, which gives them their hardness and polish; *leaves* narrow and undivided, alternate, with a slight sheath; *flowers* in little spikes, called "spikelets," arranged in spikes, racemes, or panicles. The outer portion of each spikelet consists of boat-shaped valves, green or purplish in colour, usually two in number, called glumes; the inner portion usually of two valves, the innermost of which is generally of very delicate texture, called by some writers paleæ—the lower or outer palea, and the upper or inner palea. In the following descriptions of species the lower or outer palea is termed the flowering glume, and the inner palea is termed the palea.

Within the paleæ, and alternate with them, are found two or three very minute scales, although these are sometimes wanting. The paleæ, when there are two, are unequal in size; and as the larger, instead of having one nerve, has two nerves equidistant from the central axis, it may, perhaps, be considered as two confluent valves, joined by their edges. This view of its structure affords some reason for considering it the real perianth of the flower, thus reducing the parts to the usual ternary division of Monocotyledons. *Stamens*, usually 3 (rarely 1, 2, or 6); *ovary*, one-celled, one-seeded, crowned by 2 more or less feathery styles; *fruit*, a grain—Cariops. Albumen of seed mealy or farinaceous.

In many grasses the midrib of one or more of the glumes is prolonged into a bristle, sometimes very long, called an "awn"; and this awn is either terminal—proceeding from the point of the glume, or from a notch at the top, or is inserted lower down on its back, or at its very base. There is a frequent tendency to suppression of certain parts of the floral envelope. Sometimes the whole spikelet (*locusta*) consists of only one glume and one palea; and the glumes are often empty or sterile.

Sedges may be distinguished from grasses generally by want of an inner palea between the flower and the axis of the spikelet; by the simple, not feathery branches of the style; by being generally stiffer in the substance of the leaves; by the sheath of the leaf being closed all round, whereas in the grasses the sheath is split down one side; by having solid and frequently angular stems, the stems of grasses being round and for the most part hollow.

Grasses are abundant everywhere, and, with the sedges, constitute perhaps a twelfth part of the species of flowering plants, and at least nine-tenths of the number of individuals composing the vegetation of the world. Among grasses there are land and water, but no marine plants. They are found under the Equator, and as far north as Spitzbergen, in fact, the only limits that can be assigned to their growth are those of the vegetable kingdom itself. When we enumerate wheat, oats, barley, rye, maize, rice, bamboo, sugar-cane, as Grasses, a very little reflection will render evident the enormous importance of the family to mankind, the first six mentioned being cultivated as corn plants, owing to the size and nutritious qualities of the grain; while the value of grasses as fodder for cattle is hardly second to that of their corn for human food. The best fodder grasses of Europe are usually such as do not grow more than 3 or 4 feet high; those most esteemed are *Lolium perenne, Phleum pratense*, *Festuca pratensis*, *Cynosurus cristatus*, with other species of Poa and Festuca; *Anthoxanthum odoratum* is the grass which chiefly conduces to impart its delicious fragrance to new-mown hay, but many other grasses possess fragrant aromatic secretions, which are used for medical purposes in India and elsewhere.

In the tropics grasses acquire a much greater height than in the colder parts of the world, and occasionally assume the appearance of trees. Some species of bamboo are from 50 to 60 feet high. (In Eastern countries the bamboo is used for numberless purposes—houses, furniture, cordage, and even sails of ships being made from it.) The leaves, too, of many tropical grasses are broader and approach in form those of the other families of plants. The flowers of tropical grasses are softer and more downy. The Pampas grass, now so frequently grown in gardens, is a familiar example of the size and elegance of tropical grasses. Although on a smaller scale, our own English grasses cannot be surpassed for beauty and variety of form. Extra-tropical Grasses, however, far surpass the tropical in the number of individuals. The compact grassy turf, which is such a charm of our English scenery, is almost entirely wanting in the torrid zone, where the grasses do not grow crowded together, but more dispersed, like other plants. In fact, the aggregation of grasses composing turf is most marked in the colder parts of the temperate zone; meadows occur less frequently in the south than in the north of Europe.

Sugar is a general product of grasses, and can be easily tasted in the spring. Take hold of the top of almost any of our meadow grasses, and pull gently; the stem will part at its weakest point, and on drawing the young stalk from the sheath, and chewing it, its sweetness is evident. Sugar exists in large quantities in the sugar-cane (*Saccharum officinarum*), the stem of which is solid; in maize, and some other grasses.

The geographical distribution of the grasses cultivated for food is an extremely interesting subject, but is outside the scope of the present work.

The spikelets are said to be "secund" when they all turn in one direction, and when arranged singly on distinct pedicels along a common axis, as in the Red Currant, the inflorescence is termed a Raceme; the term Panicle is given to a Raceme of which the pedicels are themselves branched.

GENERA.

* *Spikelets 1-flowered on linear spikes, either simple or in a panicle.*

1. NARDUS.—*Spike* simple; *spikelets* secund; *outer glumes* wanting; *flowering glume* tapering to a fine point: *stamens* 3; *style* simple. (Name from Greek νάρδος, some plant with a penetrating odour; why applied to this scentless grass it is difficult to say.)

2. LEPTURUS.—*Spikelets* inserted singly in notches on alternate sides of simple slender spike; *glumes* awnless. (Name from Gr. λεπτὸς, slender, οὐρά, tail—in allusion to its taper slender spikes.)

3. SPARTINA.—*Spikelets* much flattened, awnless, half an inch long, sessile along one side of simple branches of a 2 to 8-branched spikelike panicle; *outer glumes* long and narrow, strongly keeled; *flowering glumes* about same length. "Many-spiked Cord-grass." Fr. *Spartine roide.* Cut at Southampton by the poorer classes for thatching, etc. (Name from Gr. σπάρτον.)

4. CYNODON.—*Spikelets* awnless arranged singly along simple spikelike branches of the panicle, which all proceed from nearly the same point, so as to appear digitate. Distinguished by its digitate spikes from all other British grasses except *Panicum sanguinale* and *Panicum glabrum*, and from them by having the spikelets arranged singly, not in pairs, along the spikes. Sandy pastures by the sea, very rare; south-west coast of England. It has long tough runners, and short flat leaves, and is a very good sand-binder. It is one of the best pasture grasses in India, where it is known as Doorba. (Name from κύων, dog, and ὀδούς, tooth—"Creeping Dog's-tooth grass.") Fr. *Chiendent dactyle*; Ger. *Gefingerter Hundszahn.*

5. CHAMAGROSTIS.—*Minima* (Sp.), "Early Sand-grass," is the only English species. Seldom 3 inches high. *Spikes* simple; *spikelets* secund, awnless, small, purplish, almost sessile; *outer glumes* 2, nearly equal, obtuse, about a line long; *flowering glume* thin, very hairy, jagged at top, not

awned; *palea* sometimes wanting. (Name from Gr. χάμαι, on the ground, and ἄγρωστις, grass.)

6. PANICUM.—Two species of Panicum, *Sanguinale* and *Glabrum*, differ from the others by having the spikelets arranged 2 together along one side of the linear, digitate branches of the panicle. In the rest, the spikelets are crowded in a simple or spikelike panicle. *Outer glumes* usually 3, awnless; the lowest small, sometimes minute; and the genus Panicum can in most cases be recognized by this small glume.

** *Spikelets 1-flowered in a dense spike or spikelike panicle.*

6. PANICUM.—Characters above.

7. ANTHOXANTHUM.—*Spikelets* stalked, but rather crowded into a cylindrical spike or spikelike panicle; 2 *outer glumes* unequal, keeled, pointed, but not awned; 2 next empty, shorter than the outer, one with small awn on its back, the other with longer awn arising from its base; *flowering glume* and *palea* shorter, obtuse; *stamens* 2. (Name from Gr. ἄνθος, flower, and ξάνθος, yellow.)

8. GASTRIDIUM (Nitgrass).—6 to 8 inches high with flat leaves; *panicle* a loose tapering spike, 2 to 3 inches long, pale green with silvery lustre. Easily distinguished from other British grasses by the peculiar glossy tumid appearance at the base of the outer glumes, which are nearly two lines long, narrow and pointed. *Flowering glume* sometimes awned. (Name from Gr. γάστηρ, a swelling; alluding to swelling at base of glumes.)

9. PSAMMA ARENARIA. Only British species. Sea Murram or Mat-grass.—*Root-stock* creeping; *stems* stiff, 2 to 3 feet high; *glumes* awnless; *panicle* a close cylindrical spike tapering to the top; *flowering glume* with a very short awn, and hairs at the base. (Name from Gr. ψάμμη, sand: in allusion to the locality in which the species delight.)

10. ALOPECURUS (Foxtail).—*Glumes* awnless; *palea* wanting; *flowering glume* with a very slender awn at the back; *glumes* nearly equal, more or less connate below; *spikelets* flat, densely crowded into a cylindrical spike. (Name from Gr. ἀλώπηξ, fox, and οὐρά, tail.)

11. PHALARIS (Canary-grass).—*Glumes* awnless, boat-shaped, strongly keeled, densely crowded into an ovoid panicle 1 to 1½ inch long, variegated with green and white, glabrous. An erect leafy annual, 2 to 3 feet high.

Supposed to be the Phalaris of Dioscorides. (Name from Gr. φαλός, white, from its shining seeds.) Ger. *Canarien Hirse.*

12. **Phleum.**—*Spikelets* flat, crowded into an ovoid or cylindrical panicle; *outer glumes* boat-shaped, with a short point or awn; *flowering glume* awnless, or with a very short awn. Resembling the Foxtails, but distinguished from them by the presence of the palea. (Name from Gr. φλέως, the Greek name of *Saccharum cylindricum* one of the sugar-canes.)

13. **Hordeum.**—*Spikelets* 3 together, sessile on alternate notches of a simple spike; 1 or 2 of them containing perfect flowers, the 2 or 1 others either empty or with male or rudimentary flowers; outer and flowering glumes awned; spike sub-cylindrical; awns sometimes long. (*Hordeum* is the Latin name for barley.)

14. **Lagurus.**—*Spikelets* closely crowded into an oblong, softly hairy head, ½ to 1 inch long; *outer glume* ending in a fringed bristle; *flowering glume* ending in two bristles, and bearing a long bent awn on its back. (Name from Gr. λαγώς, hare, and οὐρά, tail.) The glumes being densely clothed with soft hairs, the flowers being gathered into a compact oval head, give it the softness and appearance of a hare's tail. It is a beautifully ornamental grass.

15. **Polypogon** (Beard-grass).—*Panicle* spikelike, cylindrical, or branched; *spikelets* densely crowded; *glumes* notched, awned beneath the tip, awn 3 or 4 times as long as glume; *flowering glume* notched, awned beneath the tip, awn short, very fine. (Name from Gr. πόλυς, much, and πώγων, beard, from the long awns of the spikelets.)

*** *Spikelets 1-flowered in a loose panicle.*

16. **Melica.**—*Spikelets* awnless, rather large, and few in a slender panicle, each with 1 or 2 flowers; *outer glumes* nearly equal and as long as the flowering glumes; purple. There is a terminal wedge-shaped glume enclosing one or two more minute or rudimentary ones. 1 to 2 feet high. (Name from Lat. *mel*, honey, on account of the sweetness of its stem.)

17. **Leersia.**—*Spikelets* consisting of only two glumes, like parchment; *stems* about 2 feet high; *leaves* rough; *spikelets* shortly stalked, loosely imbricated, awnless;

lower glume (or *palea*) strongly bristle, ciliate; *stamens* 3. (Named after the botanist, Mr. J. D. Leers.)

18. Milium. — *Spikelets* without awns; *outer glumes* nearly equal, as long as the flowering glumes, green; *flowering glume* concave, of firm texture, hard and shining when in fruit. A tall, slender grass.

19. Digraphis.—*Outer glumes* longer than the flowering glumes; *palea* and *flowering glume* nearly equal, hairs at their base; *styles* long. A reedlike perennial, 2 to 3 feet high, with rather broad long leaves, densely tufted at its base. *Spikelets* very numerous, *panicle* 6 to 8 inches long. (Name from δύω, two, and γραφίς, style, in allusion to the prominence of the stigmas, which are long, thick, plumose, and protruded at the apex of the flower.)

20. Calamagrostis. — A considerable genus of tall grasses. *Outer glumes* nearly equal, keeled and pointed; *flowering glume* with an awn projecting about half its length, and a tuft of long silky hairs at its base. Distinguished from the true reeds by the 1-flowered *spikelets*. (Name from Gr. κάλαμος, reed, and ἄγρωστις, grass.)

(15.) Polypogon.—The *panicle* of *P. littoralis* is slightly branched. Characters above (No. 15).

21. Aira.—The *spikelets* have usually 2 flowers, rarely 1, and the characters are given below (No. 29).

22. Agrostis.—*Spikelets* small, numerous, in an elegant panicle, with slender branches often proceeding several from the same point, forming either an erect, spikelike, loose, or spreading panicle; *outer glumes* narrow, boat-shaped, pointed, without awns, longer than the flowering glumes; *flowering glume* sometimes bearing a fine, straight awn, sometimes awnless; *palea* much smaller or wanting; *flowering glume* and *palea* sometimes hairy at base, sometimes glabrous. A considerable genus. (Name from ἄγρωστις, the Greek name for some grass.)

**** *Spikelets 2 or more-flowered, sessile in a simple spike.*

(When there are more flowers than 1 in the spikelet, the two lowest and outermost scales, one on each side, are called the *outer glumes*; the rest, containing flowers, are called *flowering glumes*.)

23. Elymus (Lyme-grass).—*Spikelets* 2 to 4-flowered, awnless, sessile in pairs in the notches of a simple spike. Sand Lyme-grass, a stiff, glaucous perennial, with long

creeping root-stock, 2 to 4 feet high. (Name from Elyma, in Greece, the country where the species are abundant.)

24. Triticum (Wheat-grass).—*Spikelets* several flowered, usually pointed or awned, closely sessile, and single in each notch of a simple spike; *glumes* nearly equal; *rachis* deeply notched. To this genus belong cultivated wheats, all annuals of uncertain origin. (Name from Lat. *tero* [part. *tritus*], to bruise, because its produce is ground into flour.)

25. Brachypodium (False Brome-grass). — *Spikelets* many-flowered (*outer glumes* pointed, *flowering glumes* awned), long, in a single spike, as in Triticum; but the *rachis* is not indented; *outer glumes* unequal; 2 to 3 feet high. (Name from βραχύς, short, and ποῦς, foot, from the very short pedicels of the spikelets.)

26. Lolium; Darnel (Rye-grass).—*Spikelets* several flowered, closely sessile, and single in each notch of the simple spike, set edge-wise to the *rachis*; *outer glume* 1 only; *flowering glume* sometimes awned; *rachis* deeply notched. (Name supposed to be derived from *linum*, flax; and *colo*, I till.)

(32.) Festuca (*Elatior*).—*Spikelets* 5 to 10-flowered, awnless, but *flowering glume* very pointed, arranged in a simple spike. In all other species of Festuca except this one the spikelets are arranged in a compact or slightly spreading panicle. Characters below (No. 32).

(42.) Poa (*loliacea*; Darnel Poa).—A small tufted annual, 6 inches high, and downwards, growing on sandy sea-shores. *Spikelets* almost sessile, awnless on alternate sides of the *rachis* of an almost simple spike, but all turning one way, about 3 lines long, each with 6 to 8 *flowers*. All other species of Poa have their spikelets in a compact or spreading panicle. Characters below (No. 42).

***** *Spikelets 2 or more flowered, panicled, awned.*

27. Arundo (Phragmites, Lanc. and Sowerby).—A very tall, erect, perennial grass, with long broad *leaves*, and a crowded though lax *panicle*. *Spikelets* several flowered; *flowering glume* very long, ending in an awn-like point, with long hairs at the base; *flowering glume* much larger than palea; *outer glumes* unequal; *flowers* dull purple. (Name from Lat. *arundo*, a reed; Phragmites, from Gr. φραγμών, a hedge.)

28. Avena (Oat).—*Spikelets* several flowered in a loose *panicle; flowering glume* ending in two acute teeth, with a long, bent, twisted awn at its back. (Name from Lat. *aveo*, to desire, because cattle are fond of it.)

29. Aira.—*Spikelets* 2-flowered (rarely 1-flowered) in a very loose (or, in *A. canescens* and *A. præcox*, in a dense and narrow) *panicle; outer glumes* nearly equal, without awns; *flowering glume* jagged, with a short, straight, or bent and twisted awn, or bifid with a bent and twisted awn.

30. Arrhenatherum (False-Oat).—A single species. *Spikelets* 2-flowered, the upper flower perfect, the lower male; the *flowering glume* of the lower flower has a long, bent, and twisted awn; that of the upper flower a very short awn, or none at all. An erect grass, 2 or 3 feet high. (Name from Gr. ἄῤῥην, male; and ἀθήρ, an awn.)

31. Bromus.—*Spikelets* several flowered, rather large, drooping or erect, in a branched, loose, or compact panicle; *outer glumes* unequal, usually keeled and awnless; *sheath of leaves* divided halfway down; *styles* below the tip of the ovary; *flowering glume* rounded at the back, awned below the tip. (Name from Gr. βρῶμα, food.)

32. Festuca (Fescue).—*Spikelets* several flowered, usually numerous, in a compact or slightly spreading panicle (in *F. elatior*, a simple spike); *outer glumes* unequal, keeled; *flowering glume* rounded at the back, very acute, pointed or tapering into an awn. Differs from Poa (42) in the longer, more pointed or awned glumes; *sheath of leaves* divided the whole way down; *styles* at the top of the ovary.

33. Cynosurus (Dog's-tail).—*Spikelets* in sessile clusters, forming a one-sided spike or head; a comb-like bract forms a kind of involucre to the cluster; *spikelets* 2 to 5-flowered; *glumes* terminate in a short point. (Name from Gr. κύων, dog; and οὐρά, tail.)

34. Dactylis (Cock's-foot).—*Spikelets* 3 to 5-flowered, flattened, ovate; densely crowded in thick one-sided clusters, arranged in an irregular short spike or slightly-branched panicle; *glumes* lanceolate, strongly keeled, awned just below the tip. A coarse stiff grass, 1 to 2 feet high. (Name from Gr. δάκτυλος, a finger.)

35. Holcus (Soft grass).—*Panicle* open, with numerous crowded *spikelets*, all 2-flowered; *outer glumes* 2 to 3

lines long, completely enclosing the flowers and their awns; the *upper flower* male, its *flowering glume* bearing a short awn; *lower flower* perfect, its *flowering glume* usually awnless. (Name from Gr. ὅλκος and ἕλκω, I draw; a name given to plants supposed to have the quality of drawing thorns from the flesh.)

****** *Spikelets 2 or more flowered, awnless, panicled or in a compound spike.*

36. **Sesleria.**—*Spikelets* few-flowered, clustered into an ovoid or cylindrical spikelike panicle; *styles* long, filiform; *glumes* nearly equal, pointed. Usually a glume-like bract on the main axis at the base of the lower spikelets. *Flowering glume* 3 or 5-toothed at the top, central tooth lengthened into a point. (Named after Leonard Sesler, an Italian botanist.)

(33.) **Cynosurus.**—Characters above.

37. **Koeleria.**—*Spikelets* usually 2 or 3-flowered, in nearly sessile clusters, crowded into an oblong or nearly cylindrical spikelike panicle; the *glumes* keeled, scarious on the edges, pointed. *K. cristata*, usually about 6 inches high. (Name from G. F. Köler, a German botanist.)

(34.) **Dactylis.**—Characters above. *Glumes* pointed; the point sometimes lengthened into a short awn.

(16.) **Melica.**—*Spikelets* 1 or 2-flowered. Characters above.

38. **Triodia.** — *Spikelets* awnless, rather large, 3 or 4-flowered, and few (seldom more than 5 or 6) in a racemose panicle; *outer glumes* pointed as long or longer than the flowering glumes; *flowering glume* with 3 very minute teeth at the top. (Name from Gr. τρεῖς, three; and ὀδούς, tooth.)

39. **Hierochloe** (Holy-grass).—*Panicle* spreading, about 2 inches long. A perennial from $\frac{3}{4}$ to $1\frac{1}{2}$ foot high. *Spikelets* 3-flowered; the two *lower flowers* male only, with 3 stamens, the *uppermost* smaller but perfect with 2 stamens. (Name from Gr. ἱερός, sacred; χλόη, grass. It is a fragrant grass like Anthoxanthum, and derives its name from its being early used to strew in churches.)

40. **Catabrosa** (Water whorl-grass).—*Spikelets* usually 2, sometimes 3-flowered; empty glumes very unequal, blunt; *flowering glume* truncate at the top. (Name from Gr. κατάβρωσις, an eating out.)

41. **Briza** (Quake-grass).—*Spikelets* several-flowered,

flat, broad and short, hanging from the slender branches of a loose panicle; *outer glumes* broad, concave; *flowering glumes* rounded at the base. (Name from Gr. βρίθω, I balance; owing to the spikelets being suspended as it were from the end of a balance.)

42. Poa (Meadow-grass). — *Spikelets* several-flowered (rarely only 2-flowered) awnless, numerous, in a spreading or compact panicle; *outer glumes* nearly equal, or in some species rather unequal, falling short of the flowering glumes; *flowering glumes* keeled at the base, or rounded on the back with 3 or 5 parallel veins. (Name from Gr. πόη, a grass.)

(32.) Festuca.—Characters above. In Sheep's Fescue, Reed Fescue, and Meadow Fescue, the awns are not present, or not above a line long.

43. Molinia.—*Flowers* in a narrow but loose panicle; purple. A single species very near Poa and Fescue, differing from the former in the much-pointed glumes, from Fescue in the smaller and less flattened spikelets. At the base of the palea of the uppermost flower there is a small bristle, bearing sometimes the rudiments of another flower. (Name from G. J. Molina, an Italian botanist.)

SPECIES.

1. Nardus.

N. stricta.—The only species. A densely tufted, erect, wiry perennial, 6 inches to near a foot high. *Leaves* fine, stiff, and bristle-like; *spikelets* often purplish. On moors, heaths, and hilly pastures. Common in Britain. Fl. summer. Eng. Mat-grass; Fr. *Nard roide;* Ger. *Steifes Borstengras.*

2. Lepturus.

L. incurvatus (*filiformis*). A decumbent annual. *Flowering stems* curved upwards or erect, a few inches to a foot high; *leaves* short and fine; *outer glumes* about 2 lines long, with strong green ribs; *flowering glumes* rather shorter, of a very delicate transparent texture. In salt marshes and maritime pastures. England, Ireland, and S. Scotland, but not common. Eng. Sea Hard-grass; Ger. *Fadenförmiger Dunn-schwanz.*

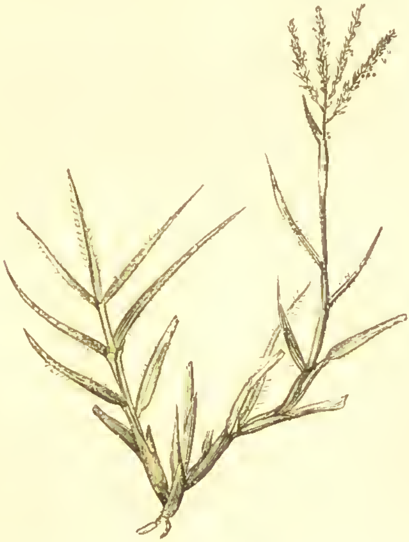
3. Spartina.

S. stricta.—A stiff erect grass. *Root-stock* creeping; *leaves* short, erect; *panicle* 3 or 4 inches long, consisting of from 2 to 4 erect spikelike branches. In muddy salt marshes, south and east coasts of England. Fl. summer and autumn. It is cut at Southampton by the poorer classes, and used for thatching. Eng. Many-spiked Cord-grass: Fr. *Spartine roide.*

NARDUS STRICTA (*Mat-grass.*)

4. CYNODON.

C. dactylon.—A low prostrate grass, with long tough runners and short flat leaves; *panicle* of 3 to 5 slender spikes, each 1 to 1½ inch long. Sandy pastures by the sea. Very rare. In Britain only on the south-west coasts of England. It is a good sand-binder, and one of the best pasture grasses in India, where it is called *Doorba.* Eng. Creeping Dog's-tooth grass; Fr. *Chiendent dactyle*; Ger. *Gefingerter Hundszahn.*



CYNODON DACTYLON (*Creeping Dog's-tooth grass*).

5. CHAMAGROSTIS.

C. minima.—The only known species. A little tufted annual seldom 3 inches high. *Leaves* short and narrow, with very thin sheaths. Rare in Britain. Coasts of Anglesea and the Channel Islands. Eng. Early Sand-grass.

6. PANICUM.

1. *P. sanguinale* (Fingered Panic) (*Digitaria*, Lanc. & Sowerby).—An annual. *Stems* 1 to 2 feet long, more or less spreading at base, then erect; *leaves* flat, hairy: *panicle* of 2 to 6 or rarely more simple slender branches, 2 to 4 inches long, digitate; *flowering glume* concave: *palea* rather smaller, 2-nerved. S. England; introduced as weed of cultivation.

2. *P. glabrum.* (Glabrous finger-grass).—Very like the last, but a much smaller plant. (*Digitaria humifusa*). *Panicle* with two or three spikelike branches. Local: S. England. Ger. *Blut-Hirse.* Red millet. Fl. summer and autumn.

3. *P. verticillatum* (Rough Panic), (Setaria, from *Seta*, a bristle).—An erect annual 1 to 2 feet high. *Leaves* flat and rough on the edges; *spikelets* small, crowded (at the top) into a cylindrical, but rather loose, compound spikelike *panicle*, 1 to 2 inches long, interspersed with numerous bristles, 2 or 3 lines long, inserted under the spikelets, but projecting beyond them; *bristles* rough with minute hairs, reversed so as to cling to the hands when the spike is drawn downwards through the hand; *first glume* very small. Found occasionally in south of England. Fl. summer and autumn. Ger. *Grunner Fennich.*

4. *P. glaucum* (Glaucous Panic).—An erect annual, very much like the Rough Panic, but of a paler green. Spikelike *panicle* more compact and regularly cylindrical: 1 to 1½ inch long; *bristles* slightly rough with minute teeth, felt as the spike is pushed upwards through the fingers. Occasionally introduced into south of England. Fl. summer and autumn.

5. *P. viride* (Green Panic).—*Flowering glume* has no transverse wrinkles. S. England. Fl. summer and autumn.

6. *P. crusgalli* (Cockspur Panic) (*Echinochloa crusgalli*). —A coarse, broad-leaved annual; *panicle* 4 to 6 inches long, irregularly pyramidal, and rather one-sided; *lowest glume* very short and broad, the next about the length of the flower, the third about as long, ending in a short point or a long coarse awn; *flowering glume* awnless, smooth, and shining. A weed of cultivation in S. England. Fr. *Panic pied-de-coq.*; Ger. *Hühner Hirse.* Fl. whole summer and autumn.

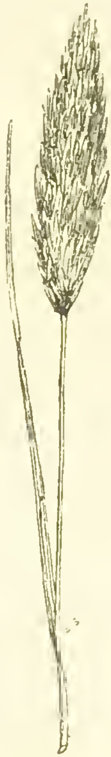
7. Anthoxanthum.

1. *A. odoratum* (Sweet vernal-grass).—A rather slender erect perennial 1 to 2 feet high, glabrous; spikelike *panicle*, 1½ to 2 inches long, *glumes* very pointed; *flower* quite included in the glumes, or rarely the longest glume projects slightly. Abundant in meadows and pastures in Britain, imparting a sweet scent to new-made hay. It contains an aromatic principle called Coumarin, the same that exists in Woodruff, Melilot, and Tonquin bean. Fl. early summer, often again in autumn. Ger. *Gemeines Ruch-gras.*

ANTHOXANTHUM ODORATUM (*Sweet Vernal-grass*).

8. GASTRIDIUM.

1. *G. lendigerum* (Awned Nit-grass).– An elegant erect annual, growing (though rare) in fields near the sea occasionally overflowed in south of England.



PSAMMA ARENARIA (*Sea Murram*).

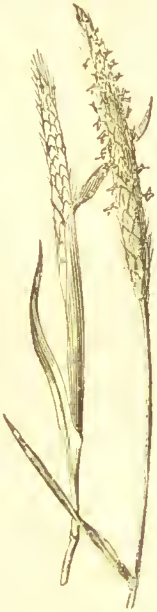
9. PSAMMA

1. *P. arenaria* (Sea Maram, or Murram, or Mat-grass). —*Leaves* narrow, stiff, erect, glaucous, concave, or rolled inwards on their edges. The *root-stock* is creeping, and by reason of its strong underground stems its value as a sand-binder cannot be overrated In the latter part

of the last century a large district near Moray Firth was destroyed by drifting sand owing to the wanton destruction of Murram, and the grass should be carefully preserved by owners of coast-land. Frequent in Britain. Fl. summer. Ger. *Gemeiner Sand-halm.*

10. Alopecurus.

1. *A. agrestis* (Slender Foxtail).—Annual. 1 to 2 feet high. *Leaves* rather short, with long, not very loose sheaths; *spike* 2 to 3 inches long, thinner and more pointed than in the other species; *spikelets* fewer, longer, not so flat, nor so closely imbricated, and usually quite glabrous; *glumes* united to about the middle. Frequent in south of Britain, decreasing northwards. Fl. the whole season.



ALOPECURUS AGRESTIS (*Slender Foxtail-grass*).

2. *A. pratensis* (Meadow Foxtail).—*Root-stock* peren-

nial; *stem* erect, 1 to 2 feet high; *sheaths* of upper leaves rather loose; *spike* 2 to 3 inches long, very dense, rather obtuse; *spikelets* very numerous and flat, 2 to nearly 3 lines long; *glumes* free, or scarcely united at the base, with short hairs on the keel, which give to the spike a soft hairy aspect; hair-like awns project 2 to 4 lines beyond outer glumes. Abundant in Britain. Fl. spring and summer.

ALOPECURUS GENICULATUS (*Floating Foxtail*).

3. *A. geniculatus* (Marsh Foxtail).—A perennial or annual. *Stem* procumbent, bending upwards at lower nodes; *sheaths* of upper leaves rather loose; *spike* 1 to 2 inches long, closely imbricated like that of the Meadow Foxtail, but more slender, and with much smaller spikelets; *outer glumes* hairy on the keel, not so pointed

as in the Meadow Foxtail, and scarcely above a line long; the hair-like awns not projecting above a line beyond them.

4. *A. Alpinus.—Root-stock* and *stems* of *pratensis*, but usually not so tall, and sheaths of upper leaves looser; *spike* seldom above an inch long unless cultivated, and softly silky with the rather long hairs which cover the glumes; *spikelets* rather smaller than in *pratensis*, the awns either included within the glumes, or scarcely projecting from them. A high northern plant. In Britain it occurs in the higher mountains of Scotland, although unknown in Scandinavia.

PHALARIS CANARIENSIS (*Canary Grass*).

11. PHALARIS.

1. *P. Canariensis.—Outer glumes* very flat, 3 to 4 lines long, acute, but not awned, white on the edges, with a

broad green line down each side; *flowering glume* much shorter, narrow and pointed, smooth and shining, hardening round the seed as it ripens. In Britain only known as a weed of cultivation in some parts of southern England. Much cultivated as canary seed in central and northern Europe. Fl. summer.

12. Phleum.

1. *P. pratense* (Timothy Phleum, Timothy-grass, Cat's-tail).—A perennial, 1 to 3 feet high. *Leaves* rather soft, round on the edges; *spike* long and cylindrical from 1 to 3 or 4 inches long; *outer glumes* about a line long with broad scarious edges, with points on each side not half so long as the glumes; *flowering glume* entirely included in outer glumes. In meadows and pastures from the Mediterranean to the Arctic regions. Abundant in Britain. Fr. *Fléole des prés*; Ger. *Timothee-gras*; this latter name from

PHLEUM PRATENSE (*Common Cat's-tail*).

Timothy Hanson, who cultivated it in N. America. Fl. early summer, and often again in autumn.

2. *P. Alpinum.*—Perennial, like the last, but usually much shorter. *Outer glumes* with an awn 1 to 2 lines long; *spike* oblong, usually purplish. In Britain only in the higher Scotch mountains. Fl. summer.

3. *P. Bœhmeri* (Boehmer's Phleum).—An erect perennial, like the Timothy-grass, but usually smaller. *Outer glumes* narrow lanceolate, tapering into a minute point; *flowering glume* much smaller; *palea* with a minute bristle at its base outside. Rare in Britain. Local, Eastern counties. Fl. summer, rather early.

4. *P. asperum* (Rough Phleum).—An annual 6 inches to a foot high, like Boehmer's Phleum, but *spikelets* smaller and more numerous; *glumes* less than a line long, of a firm texture, smooth or scarcely rough, narrow at the base, enlarged upwards, and contracted rather suddenly into a very short point; *flowering glume* very small. Rare in Britain. Local, Cambridgeshire and a few other English counties. Fl. summer.

5. *P. arenarium.*—An erect annual, 6 to 8 inches high, with short leaves; *spike* ¾ to 1¼ inch long, dense, and nearly cylindrical, but more or less tapering at the base; *spikelets* about 1½ line long; *glumes* lanceolate, tapering into a short point; keel ciliate with stiff hairs, and a very prominent nerve on each side; *flowering glume* not one-third the length of the outer glumes. In maritime sands, chiefly in the west of Europe. Common on the coasts of England and Ireland, rare in Scotland. Fl. spring and early summer.

13. Hordeum—Barley.

1. *H. sylvaticum* (Wood Barley).—An erect perennial about 2 feet high, with flat *leaves*, usually hairy on the sheaths; *spike* cylindrical, not very dense, about 3 inches long; *spikelets* three together; *flowers* of the two lateral spikelets perfect; the central spikelet of each notch is reduced to two narrow linear glumes, either quite empty, or rarely containing a rudimentary or male flower; *glumes* like those of central spikelet, but rather broader and longer, and placed side by side; *flowering glume* shorter, but terminating in a long awn. In some

of the midland and northern counties of England; not in Ireland or Scotland. Fl. summer.

2. *H. pratense* (Meadow Barley)—An erect or decumbent annual or perennial, often 2 feet high, tufted or bulbous at the base. *Leaves* glabrous and rather narrow; *spike* 1½ to 2 inches long, close and cylindrical; to each notch are three pairs of awn-like rough glumes; within the central pair is a *flowering glume*, lanceolate, but completely rolled round the flower, tapering into an awn as long as itself; within each of the two lateral pairs is usually a *flowering glume*, smaller than the central one, either empty or enclosing a male or rudimentary flower. In moist pastures. Frequent in England and Ireland, scarcely extending into Scotland. Fl. early summer.

HORDEUM MURINUM (*Wall Barley*).

3. *H. murinum* (Wall Barley).—A rather coarse, tufted grass. *Stems* decumbent at base, 1 to 2 feet long; *leaves* often hairy; *spike* dense and cylindrical, 3 or 4 inches long, thickly beset with long rough awns; *glumes*

of the three spikelets all awn-like, those of central spikelet, which encloses a perfect flower, somewhat broader at the base and ciliate; *lateral spikelets* empty or with an imperfect male flower. In waste places. Frequent in greater part of England and Ireland, rare or local in Scotland. Fl. all summer. Fr. *Orge queue de rat;* Ger. *Mäuse Gerste.*

4. *H. maritimum* (Sea Barley).—Very near Wall Barley, but smaller and somewhat glaucous. *Spikes* smaller, with shorter awns. Abundant on several of the English coasts; doubtful in Scotland or Ireland. Fl. summer. Ger. *Meerstrands Gerste.*

14. Lagurus.

1. *L. ovatus* (Ovate Hare's-tail).—An erect annual from a few inches to above a foot high. *Leaves* hoary with soft down; *sheaths* rather swollen; *spikelets* very numerous. Maritime sands and waste places. Channel Islands. Fl. early summer.

15. Polypogon.

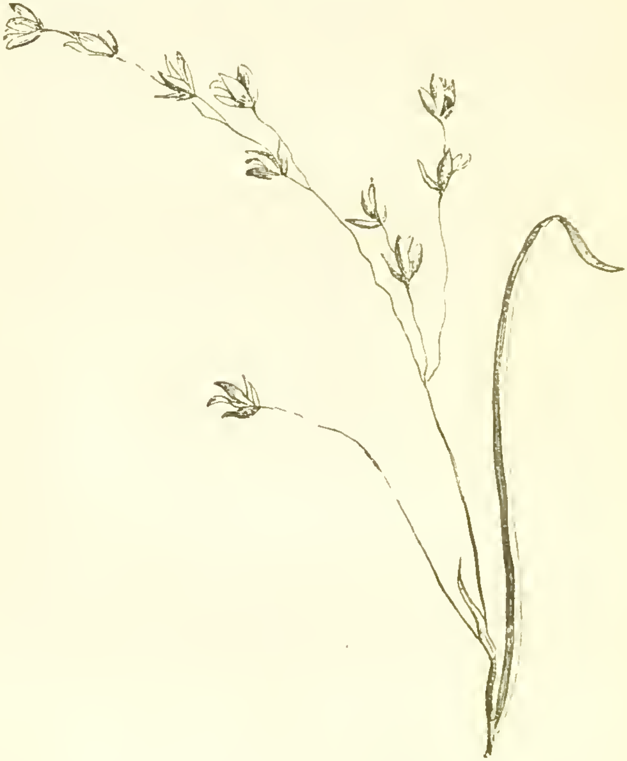
1. *P. monspeliensis* (Annual Beard-grass).—Procumbent at base, or rarely erect, 1 to 1½ foot high. *Leaves* flat, rather flaccid; *panicle* 2 to 3 inches long, of a yellowish shining green. Rare in Britain, only in some of the south-eastern counties. Ger. *Sandhalm Ostsee.* Fl. summer.

2. *P. littoralis* (Perennial Beard-grass).—Procumbent perennial. *Panicle* more branched than in the Annual Beard-grass; *glumes* longer, tapering into an awn scarcely longer than the glume itself; *flowering glume* small and awnless. Salt marshes. Local on the coasts of Norfolk, Essex, Kent, and Hampshire. Fl. summer.

16. Melica.

1. *M. nutans* (Mountain Melick).—A slender erect perennial, with erect flat leaves. *Panicle* one-sided, 2 to 3 inches long, branches short, slender, usually erect; *spikelets* about 10 to 15, drooping, 3 or 4 lines long, two-flowered; *glumes* brown or purple, with scarious edges. In woods and shady rocky places in hilly districts. In Britain chiefly in Scotland and the north of England. Fl. early summer.

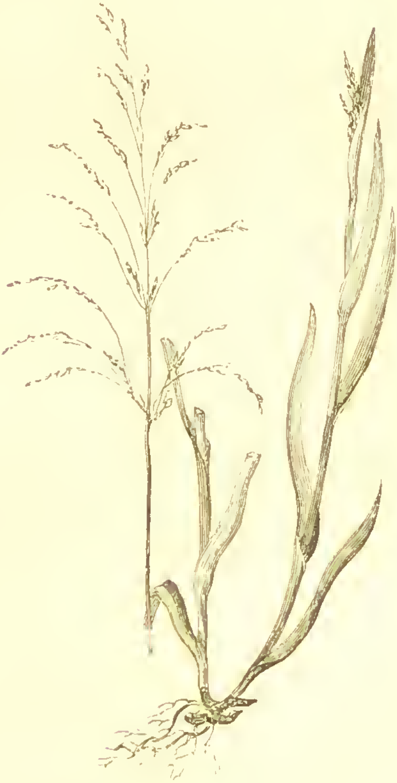
2. *M. uniflora* (Wood Melick).—An elegant perennial, 1 to 2 feet high, very slender, with long and narrow *leaves*. *Leaf-sheath* quite closed opposite the blade, as in the sedges, and produced into a small green point: *panicle* sometimes reduced to an almost simple raceme, with only 3 or 4 spikelets, sometimes with a few long, slender, distant branches, each bearing several spikelets: each *spikelet* nearly 3 lines long, coloured, erect, and containing only one flower. Frequent in woods and shady places in England and Ireland, less so in Scotland. Fr. *Melique penchée*; Ger. *Nickendes Perl-gras*. Fl. early summer.



MELICA UNIFLORA (*Wood Melick-Grass*).

17. Leersia.

1. *L. oryzoides* (characters given page 6).—In wet places. Discovered, 1845, in Hampshire, Sussex, and Surrey. Fl. autumn.

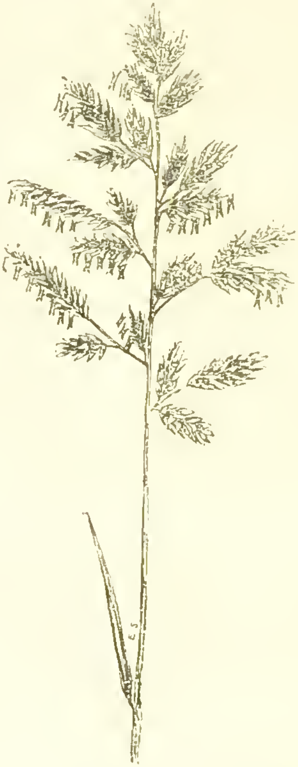


MILIUM EFFUSUM (*Spreading Milium*).

18. Milium.

1. *M. effusum* (Spreading Milium).—*Stem* often 4 or 5 feet high; *leaves* rather short and flat; *panicle* long,

loose, slender and spreading; *spikelets* small, pale green or purple; *glumes* concave, but not keeled, 1 to 1½ line long, nearly smooth; *flowering glume* almost as long, very smooth and shining; *palea* nearly similar, but rather smaller, faintly 2-nerved, and notched at the top. In moist woods. Common in Britain. Fl. summer.

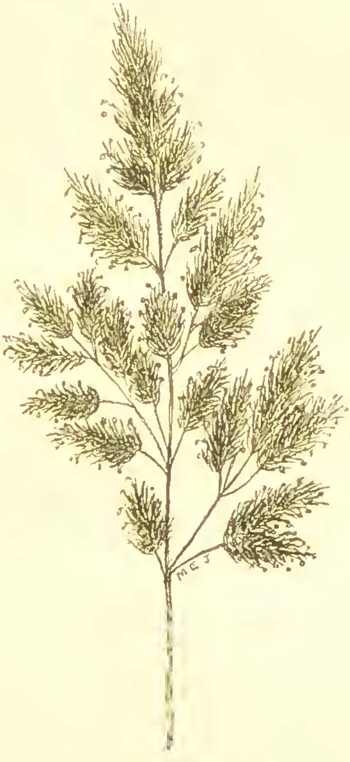


DIGRAPHIS ARUNDINACEA (*Reed Digraphis*).

19. DIGRAPHIS

1. *D. arundinacea* (Reed Digraphis).—*Outer glumes* about 2 lines, lanceolate and pointed, but not awned. keeled but not winged, pale-green or whitish with green

nerves; *flowering glume* smooth and shining and hardened round the seed, with two minute, linear, hairy scales or rudimentary glumes at its base, one on each side. On river banks and in marshes; common in Britain. Fl. summer. A variety with variegated leaves is often cultivated in gardens under the name of Striped-grass or Ribbon-grass.



CALAMAGROSTIS EPIGEIOS (*Wood Small-reed*).

20. CALAMAGROSTIS (*Small-reed*).

1. *C. epigeios* (Wood Small-reed).—*Stems* 3 or 4 feet high, erect; *leaves* long, narrow, somewhat glaucous;

panicle branched, but not spreading except when in full flower, from a few inches to near a foot long, with numerous crowded spikelets, often having a purplish tint; *outer glumes* very narrow, lanceolate and pointed, both near 3 lines long; *flowering glume* thin, its awn very short and slender, inserted some way from the top and scarcely distinguishable from the long silky hairs which encircle the flower. In moist open places in woods; abundant in some parts of southern England and Ireland, but not generally common, and rare in Scotland. Fl. summer. Fr. *Arundo épigeios;* Ger. *Land-Schilf.* One of the handsomest grasses.

2. *C. lanceolata* (Purple Small-reed).—A tall grass, like the last; but the *panicle* is looser, 5 or 6 inches long, with slender branches, and more often assuming a shining purple tint. In the *flowering glume* the awn is inserted close to the cleft summit. Dispersed over several parts of England; unknown in Ireland and Scotland. Fl. summer. Fr. *Calamagrostis lancéolé;* Ger. *Lanzetliches Schilf.*

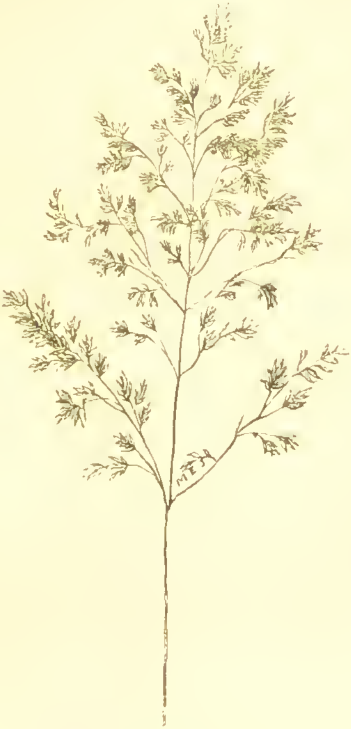
3. *C. stricta* (Narrow Small-reed).—More erect than the Purple Small-reed; 1½ to 3 feet high, with stiffer, narrow *leaves; panicle* very narrow, 4 to 6 inches long: *spikelets* smaller than in the last species, *glumes* broader; *hairs* much shorter than flowering glume, the awn of which is inserted rather below the middle. In bogs and marshes; rare in Britain; formerly found in Scotland, recently in the moors around Oakmere, in Cheshire; and in County Antrim, Ireland. Fl. summer. Ger. *Vernachlässigtes Schilf.*

21. AIRA (*vide infra*, No. 29).

22. AGROSTIS.

1. *A. alba* (Common Agrostis).—An elegant but most variable perennial; in dry mountain pastures often densely tufted, and not above 2 or 3 inches high; in rich moist soils creeping and rooting at the base; *flowering stems* erect, 1 to 2 feet high; *leaves* flat, rather short, but narrow; *spikelets* scarcely a line long: *glumes* nearly equal, or the lowest rather the largest; *flowering glume* very thin, awnless, or rarely with a minute awn arising from

its base; *palea* usually a little less than half its length. It varies in the more or less spreading panicle of a light-green or purplish colour. Abundant in Britain. Fl. the whole summer. Fr. *Agrostide commune* (or *A. blanche*); Ger. *Gemeines Strauss-Gras.*



AGROSTIS ALBA (*Common Agrostis*).

2. *A. canina* (Brown Agrostis).—Very near the Common Agrostis, but *leaves* are rather finer, the *panicle* less spreading, *glumes* longer and more pointed; *flowering glume* with a fine awn springing from its back below the middle, which slightly protrudes beyond the glumes; *palea* very minute or wanting. Not generally common,

but spread over the whole of Britain. Fl. summer. Fr. *Agrostide des chiens*; Ger. *Hunds Strauss-Gras.*

3. *A. setacea* (Bristle Agrostis).—Perennial, with densely tufted *leaves*, mostly radical, and finely subulate; *stems* erect, 1 to 2 feet high, with narrow slender *panicle*, always contracted except when the flowers are expanded: *glumes* narrow and more pointed than in *A. alba*, the lowest longer than the second; *flowering glume* with a

ELYMUS ARENARIUS (*Sand Lyme-grass*).

fine awn at its base; *palea* very minute. On dry heaths in Hampshire, Sussex, and Surrey. Fl. summer.

4. *A. Spica-venti* (Silky Agrostis).—One of the handsomest of grasses. A rather tall, slender annual, with rather narrow flat *leaves*; *panicle* long, usually spreading, with slender and hair-like branches, and little shining spikelets hardly a line long; *glumes* narrow, very pointed, the second rather larger than the lowest one; *flowering glume* with a hair-like awn, 3 or 4 times as long as the spikelet; *palea* small. In Britain, only found in some of the eastern counties. Fr. *Agrostide jouet de vent* (*Anemagrostis*) Ger. *Gemeiner Windhalm.*

23. Elymus (*Lyme-grass*).

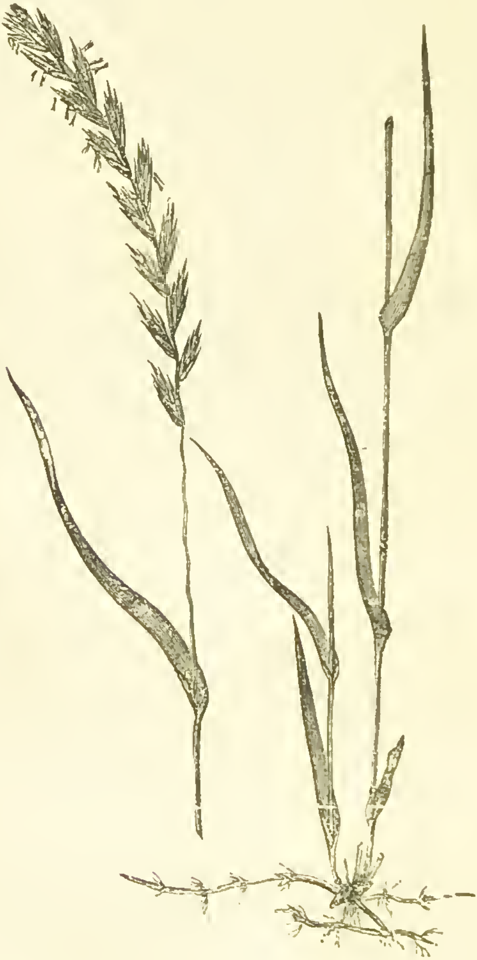
1. *E. arenarius* (Sand Lyme-grass).—*Spike* sometimes rather dense, 3 to 8 inches long, with the spikelets in rather distant pairs; *glumes* lanceolate, stiff, downy or rarely glabrous, 8 or 9 lines long, and very pointed; *flowering glume* shorter, broader, and less pointed. In maritime sands all round the British Isles, but more frequent in the north than in the south. Fl. summer. Fr. *Élyme d'Europe*; Ger. *Sand Haar-Gras* (Sand Hair-grass).

24. Triticum (*Wheat-grass, Couch-grass*).

1. *T. repens* (Couch Wheat-grass).—A perennial with extensively creeping root-stock, and stiff erect stems, 1 to 2 or 3 feet high; the whole plant varies from a bright green to a pale glaucous colour; *spikelets* 8 to 10 or more, at regular distances on alternate sides of a spike varying in length from 2 to 5 inches, each spikelet containing 5 or 6 flowers; *glumes* and *flowering glumes* alike, narrow and stiff, marked with 5 or more nerves, usually pointed, or terminating in an awn, sometimes very short, sometimes as long as the glume itself. Abundant in Britain. Fl. summer.

The Rush Wheat-grass, *Triticum junceum*, is a maritime variety of the same species, stiffer and more glaucous, having the glumes often obtuse, and the leaves almost pungent. Ger. *Binsen formiger Weizen.* A decumbent variety has been named *Triticum acutum*; Ger. *Spitziger Weizen.*

2. *T. caninum* (Fibrous Wheat-grass).—*Stems* tufted, no creeping root-stock, more leafy and not so glaucous as *Triticum repens*; *flowering glumes* with 5 very prominent ribs, and terminating in a rather long awn; the empty

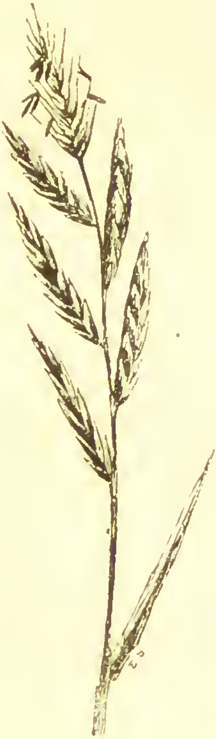


TRITICUM REPENS (*Couch Wheat-grass*).

glumes smaller than the flowering glumes, with shorter awns and often only 3 ribs. In Britain generally distributed in woods and shady places, but not very common. Ger. *Hund Weizen.* Fl. summer.

25. Brachypodium (*False-Brome*).

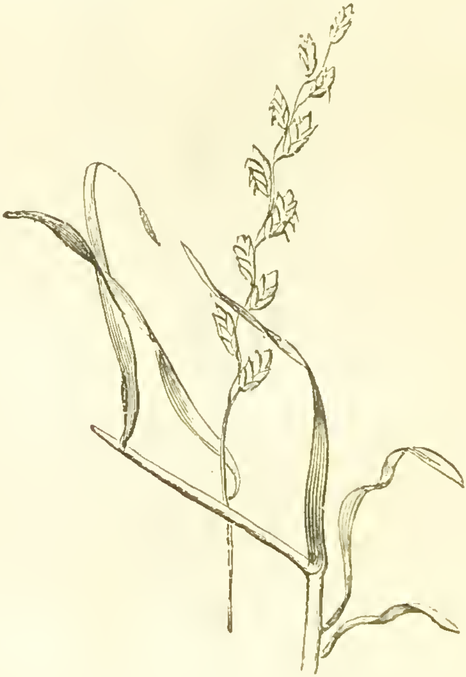
1. *B. sylvaticum* (Slender False-Brome).—A rather erect grass, 2 to 3 feet high, with perennial tuft and



BRACHYPODIUM SYLVATICUM (*Slender False-Brome*).

slightly creeping *root-stock*; *leaves* flat and rather long; *spikelets* usually 6 or 7 in a loose spike, more or less drooping, rarely erect. Each about an inch long, nearly cylindrical when young, flattened when in fruit, containing 8 to 16 flowers; *glumes* pointed; *flowering glume* ending in an awn, as long or longer than itself; *palea* fringed with a few hairs. Woods and hedges; common in England and Ireland, more scarce in Scotch highlands. Fl. summer.

2. *B. pinnatum* (Heath False-Brome).—Grows in more open situations than *sylvaticum*; *root-stock* more creeping, *spikelets* more erect; *flowering glume* rather smaller and more open, awn very much shorter. Eastern and central counties of England; unknown in Scotland and Ireland. Fl. summer. Fr. *Brachypode primielle.*



LOLIUM PERENNE (*Rye-grass Lolium*).

26. Lolium (*Rye-grass*).

1. *L. perenne* (Rye-grass Lolium).—An erect or slightly decumbent grass, either annual or perennial, 1 to 2 feet

high, leafy in lower part; *spike* 6 inches to a foot long, *spikelets* not close together; *outer glume* of lateral spikelets empty, stiff, and strongly nerved, usually much larger than the others, seldom 6 lines long, and never so long as the whole spikelet; *flowers* 8 to 16 or more; *flowering glume* obtuse or pointed, sometimes ending in a short awn. Abundant in Britain. Fl. whole season. It varies much in shape of glumes. Fr. *Ivraie vivace*; Ger. *Englisches Ray-gras.*

2. *L. temulentum* (Darnel Lolium, Common Darnel).—

ARUNDO PHRAGMITES (*Common Reed*).

Closely allied to preceding, but the root always annual, the *outer glume* of the *spikelets* is usually as long as the spikelet itself; the *flowering glume* shorter and broader, and some of them at least have an awn longer than themselves.—Not common in Britain. Fl. summer. Fr. *Ivraie enivrante*; Ger. *Taumel Lolch.* (Reeling or Giddy Rye-grass.)

27. Arundo (*Reed*).

1. *A. Phragmites.*—A stout perennial, usually 5 or 6 feet high, sometimes much more; *root-stock* long and creeping; *leaves* long and numerous, often an inch broad all up the stem; *panicle* from a few inches to a foot long, with numerous branches, more or less drooping, of a purplish brown colour; *spikelets* very numerous, narrow, above six lines long; *glumes* unequal; *palea* much smaller than flowering glume. The silky hairs which lengthen as the seeds ripen give the panicle a beautiful silvery appearance. Differs from the Small-reed in having more than one flower in the spikelet. It has no agricultural merits, but is used for thatching, for making garden screens, etc.; also by brickmakers. It is very serviceable on the banks of rivers for binding the soil. The creeping stems are very nutritious, contain much sugar, and might be used for fodder. In wet ditches, marshes, and shallow waters, almost all over the world. Common in Britain. Fl. late summer and autumn. Fr. *Roseau commun*; Ger. *Gemeines Rohr.*

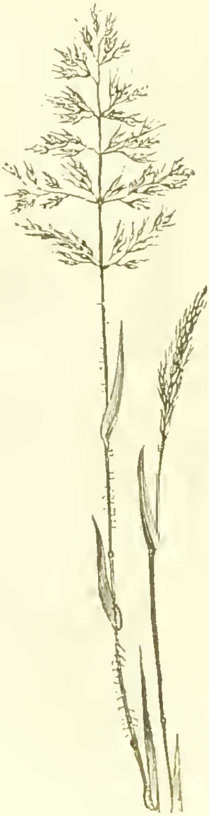
28. Avena (*Oat*).

1. *A. fatua* (Wild Oat).—An erect glabrous annual, 2 to 3 feet high, with a loose panicle of large *spikelets* hanging from slender pedicels of unequal length; *outer glumes* nearly $\frac{3}{4}$ inch long, tapering to thin scarious point; *flowers* 2 or 3; *flowering glume* not quite so long as the glumes, of firm texture at base, covered outside with long brown hairs; *awn* twice as long as the spikelet.—A common weed of cultivation in all corn countries. Abundant in Britain. Fl. with the corn. It is said that the cultivated oat is a variety of this species. *A. strigosa*, *fatua*, and *sativa*, are near relations. All are grasses of a downy character, vapid and sapless.

2. *A. pratensis* (Perennial Oat).—An erect perennial; *root-stock* shortly creeping or tufted, 1 to 3 feet high; *panicle* slightly compound, or a simple raceme; *spikelets* erect, 3 or 4-flowered, glabrous and shining; *glumes* scarious at top; *outer glume* empty, 6 lines long; *flowering glume* shortly cleft at the point, with awn at back twice its length. In Britain widely distributed, but not very common. Fl. summer, rather early.

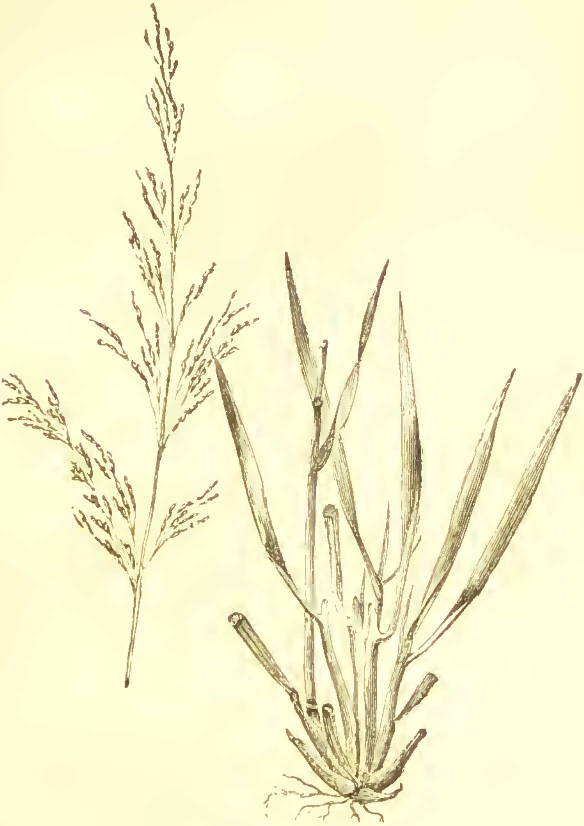
AVENA FATUA (*Wild Oat*).

3. *A. flavescens* (Yellow Oat).—An erect perennial 1 to 2 feet high; *panicle* oblong, with slender, somewhat spreading branches and pedicels; *spikelets* erect, shining, often yellowish, not half the size of those of the perennial oat; *glumes* all scarious, two outer empty ones very unequal; *flowers* 4 or 5; *flowering glume* 2-cleft; its awn twisted and bent, but short, and very fine and hair-like. Frequent in England and Ireland, less so in Scotland. Fl. summer.



AVENA FLAVESCENS (*Yellow Oat*).

4. *A. pubescens.*—A variety of *A. pratensis;* has the *leaf-sheaves* more or less downy; rather smaller *spikelets,* and the hairs on the axis of the spikelet between the florets much longer.



AIRA CÆSPITOSA (*Tufted Hair-grass*).

29. AIRA (*Hair-grass*).

1. *A. cæspitosa* (Tufted Hair-grass).—A perennial 2 to 4 feet high, forming dense large tufts; *leaves* rather stiff and flat, very rough on the upper surface; *panicle* 6

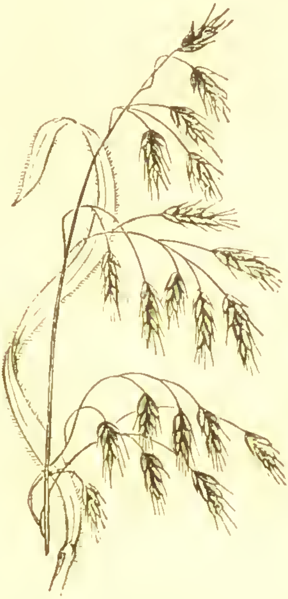
inches to 1 foot long, very elegant, with spreading slender branches; *spikelets* 2-flowered, silvery-grey or purplish, about 1½ line long; *flowering glume* minutely toothed or jagged at the top, with a fine hair-like awn inserted near the base, not so long as the glume itself. In moist shady places; abundant in Britain. If plentiful on a farm, shows that the land wants under-draining. Fr. *Canche gazonnante*; Ger. *Rosenförmige Schmiele* (Rose-like Hair-grass).

ARRHENATHERUM AVENACEUM (*Common False-Oat*).

2. *A. flexuosa* (Wavy Aira).—A much smaller and more slender plant than the Tufted Aira; 1 to 1½ foot high;

leaves very narrow, rolled inwards on the edges; *panicle* spreading, 2 or 3 inches long; *spikelets* much fewer than in Tufted Aira, but longer, usually 2 to 3 lines, very shining, with fine hair-like awns protruding beyond the glumes. On heaths and hilly pastures; generally distributed over Britain. Fl. summer.

3. *A. canescens* (Grey Aira).—A small tufted variety found on sandy sea-coasts of Norfolk and Suffolk.



BROMUS ASPER (*Hairy Brome*)

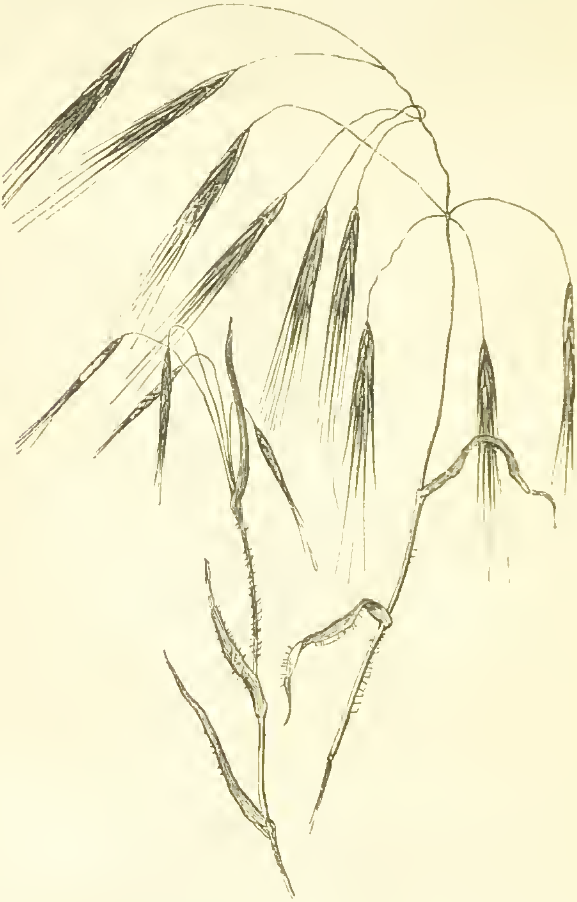
4. *A. præcox* (Early Aira).—Slender, tufted, 3 to 6 inches high; *leaves* short and fine; *panicle* contracted, ½ to 1 inch long. Generally spread over Britain.

5. *A. caryophyllea* (Silvery Aira).—Slender, graceful, tufted, like *præcox*, but with loose and spreading *panicle*; 6 inches high. Generally spread over Britain.

30. ARRHENATHERUM (*False-Oat*).

1. *A. avenaceum* (Common False-Oat).—*Panicle* narrow

and loose, 6 or 8 inches long, only spreading when the flowers are open; *spikelets* 3 to 4 lines long. Common in Britain. Fr. *Arrhénathère élevée*; Ger. *Hoher Wiesenhafer.*



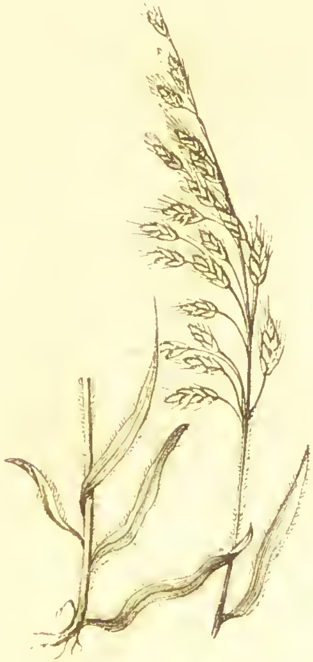
BROMUS STERILIS (*Barren Brome*).

31. Bromus (*Brome*).

1. *B. erectus* (Erect Brome).—A perennial 2 feet high; *panicle* compact and erect, 3 to 5 inches long; *spikelets*

½ to 1½ inch long, containing 6 to 10 or more flowers; *flowering glume* hairy on back; *awn* straight, half its length. In Britain, chiefly south and east of England; very local in Wales, Ireland, Scotland. Fr. *Brome dressé*; Ger. *Aufrechte* (upright) *Trespe.* Fl. summer.

2. *B. asper* (Rough or Hairy Brome).—3 to 6 feet high; *leaves* long and flat, hairy on the sheaths; *panicle* loose, with long drooping branches; *spikelets* loose and few, above 1 inch long, with 6 to 10 flowers; *flowering glume* nearly cylindrical, with straight fine awn, shorter than the glume. Frequent in Britain. Fr. *Brome rude*; Ger. *Rauhaarige* (rough-haired) *Trespe.* Fl. summer.



BROMUS MOLLIS (*Soft Field Brome*).

3. *B. sterilis* (Barren Brome).—1 to 2 feet high; *leaves* softly downy; *panicle* 6 inches long or more; *spikelets* more

than 2 inches long (including the awns), with 6 or 8 flowers; *flowering glume* rough on the back, distinctly 7-nerved, with a straight awn longer than itself. Abundant in England, Ireland, and lowlands of Scotland. Fl. summer. Fr. *Brome stérile*; Ger. *Taube Trespe.*

4. *B. maximus* (Great Brome).—Near *B. sterilis*, but *panicle* more erect, and the *spikelets*, including awns, are often 3½ inches long. Found in Jersey. Fl. early summer.

5. *B. madritensis* (Compact Brome).—Upright annual, seldom above 1 foot high; *panicle* nearly erect, very compact, purplish; the *flowers*, like other Bromes, have sometimes only two stamens. Southern counties of England and Tipperary. Fl. early summer.

6. *B. arvensis* (Field Brome).—Erect annual or biennial, from 1 to 2 or 3 feet high, sometimes softly downy, sometimes quite glabrous; *panicle* sometimes small, compact, erect, more frequently more or less drooping. This species is always distinguishable from the four preceding by its short oblong or ovoid turgid *flowering glumes*, 3 to 4 lines long, giving a broader and fuller shape to the spikelet; *awn* usually about as long as the flowering glume. Abundant in Britain. Varieties of this grass have been recognized as species by different authors; their names indicate the characters: Rye-like Field Brome; Soft F. B.; Smooth F. B.; Many-flowered F. B. Fr. *Serrafalcus des Champs*; Ger. *Acker Trespe.*

7. *B. giganteus* (Tall Brome).—Very like *B. asper*, but the spikelets (7 or 8 lines long) are much smaller. A glabrous perennial 3 or 4 feet high; *glumes* unequal, lowest 1-nerved, second 3-nerved; *flowering glume* lanceolate, about 3 lines long, with fine awn 6 lines long, inserted a little below the tip; *spikelets* with 3 to 6 flowers. Not so common as Hairy Brome. Fl. summer. Fr. *Fétuque élancée*; Ger. *Riesen Schwingel.*

32. FESTUCA (*Fescue*).

1. *F. ovina* (Sheep's Fescue).—A densely tufted perennial 6 inches to nearly 2 feet high; *leaves* chiefly radical, and when radical subulate and almost cylindrical; *panicle* rather compact and slightly one-sided, from 1½ to 4 inches long; *spikelets* less than 6 lines long; *flowering glume* faintly veined, the veins converging; *glumes* generally bearing a fine point or awn about a line long. In hilly

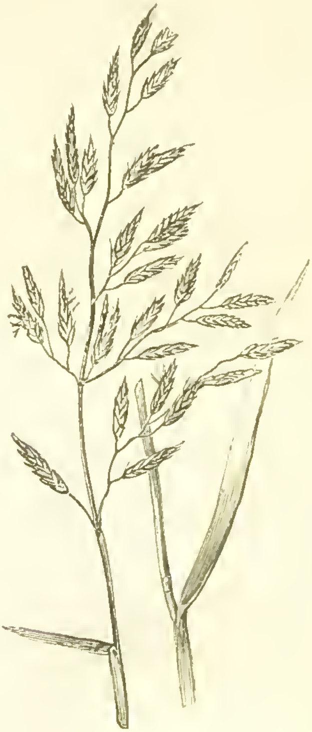
pastures; abundant in Britain. Fr. *Fétuque des Brebis*; Ger. *Schaf Schwingel.*

Among varieties, one growing in moister and more luxuriant pastures, and rather taller, is named *F. duriuscula.* Fr. *Fétuque dure*; Ger. *Stärkerer Schwingel.*

FESTUCA OVINA (*Sheep's Fescue*).

2. *F. elatior* (Meadow Fescue, Tall Fescue).--Perennial 2 to 4 or 5 feet high; *leaves* flat, but varying much in

breadth; *panicle* sometimes reduced to a simple spike, with almost sessile distant spikelets, more frequently branched, but always erect and narrow, 5 or 6 inches to near a foot long; *spikelets* 6 lines to near an inch, with 5 to 10 or more flowers; *flowering glume* 5-ribbed. In meadows and moist pastures; common in Britain. Fr. *Fétuque élevée*; Ger. *Hoher Schwingel*.

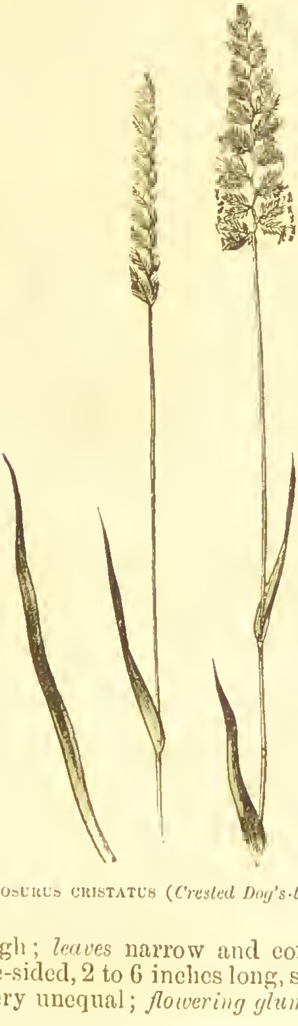


FESTUCA PRATENSIS, OR ELATIOR (*Meadow, or Tall Fescue*).

3. *F. sylvatica* (Reed Fescue).—A tall reed-like perennial; *leaves* rather broad and flat; *panicle* compact, 4 to 6 inches long; *spikelets* numerous, smaller than in Sheep's Fescue; *flowering glume* 2 lines long, tapering into fine point. Widely distributed in Britain, but not found in

north of Scotland. Fr. *Fétuque des bois*; Ger. *Wald Schwingel.*

4. *F. myurus* (Rat's-tail Fescue).—A tufted annual,



CYNOSURUS CRISTATUS (*Crested Dog's-tail*).

about a foot high; *leaves* narrow and convolute; *panicle* slender and one-sided, 2 to 6 inches long, sometimes spike-like; *glumes* very unequal; *flowering glume* ending in an awn as long as itself. Frequent in England and Ireland, less so in Scotland.

5. *F. uniglumis.*—A tufted annual about 6 inches high; *leaves* convolute; *panicle* one-sided and spike-like, 2 inches (or rather more) long; *outermost glume* wanting; 2nd lanceolate, 4 to 6 lines long, ending in an awn-like point; *flowering glumes* 3 or 4, ending in an awn longer than themselves. On the sandy sea-coasts of Ireland, western, southern, and south-eastern England. Fl. early summer. Fr. *Fétuque uniglume.*

DACTYLIS GLOMERATA (*Clustered Cock's-foot*).

33. CYNOSURUS (*Dog's-tail*).

1. *C. cristatus* (Crested Dog's-tail).—A slightly tufted perennial; *leaves* narrow and short; *stems* slender, erect,

often wiry, from under a foot to nearly 2 feet; *flower-spike* 1 to 3 inches long. In rather dry hilly pastures; abundant in Britain. The dry stalks, not eaten by sheep, are called "bents." The slender stems are valuable for making hats and bonnets, being superior to any for this purpose. Fl. summer.

2. *C. echinatus* (Rough Dog's-tail).—An annual, less stiff than *cristatus; spike* ovoid and less regular. Sandy pastures. Very rare. Fr. *Cynosure hérissé.*

34. Dactylis (*Cock's-foot*).

1. *D. glomerata* (Clustered Cock's-foot).—Characters given above. Abundant in Britain. Fl. the whole season. A valuable agricultural grass. Fr. *Dactyle aggloméré;* Ger. *Gemeines Knaulgras.*

35. Holcus.

1. *H. lanatus* (Common Holcus).—A perennial; *rootstock* creeping; *stems* ascending, 1 to 2 feet high; the whole plant clothed with a very short down, giving it a pale soft appearance; *panicle* 2 to 3 inches long, pale whitish or reddish; *outer glume* about 2 lines long, obtuse, but often with short point just below the tip; *flowering glume* of perfect flower awnless, that of male flower with a small awn, seldom reaching the length of the glume. One of the commonest British grasses; a mischievous weed in arable land. Fr. *Houlque molle;* Ger. *Weiches Honnig-gras.* Fl. all summer.

2. *H. mollis* (Soft Holcus).—Very near preceding. Not generally so downy, and *spikelets* larger; *outer glumes* taper to fine point; the awn of the *flowering glume* of upper flower usually projects beyond the glumes. Not nearly so common as preceding. Fl. summer.

36. Sesleria.

1. *S. cærulea* (Blue Moor-grass).—Perennial; 6 inches to a foot high, with shortly creeping *root-stock*, and densely tufted short and rather stiff radical *leaves; spike* (or spikelike panicle) ovoid or oblong ½ to ¾ inch long: *glumes* somewhat silvery, dark purplish lead colour. On rocks,

mica slate, limestone, and banks; local. York, Durham, Westmoreland, Cumberland, and Scotch Highlands, western counties of Ireland.

(33. CYNOSURUS. Characters above.)

HOLCUS MOLLIS (*Soft Holcus*).

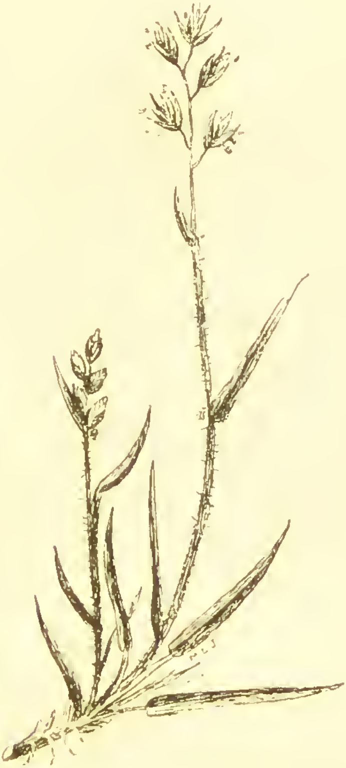
37. KOELERIA.

1. *K. cristata.*—A perennial 6 inches to 1 foot high. Characters above. *Flowering glume* white and scarious, except the green keel, giving the spike a variegated and shining, silvery-grey aspect. On pastures with a dry soil, especially near the sea; rare. Fl. summer.

(34. DACTYLIS.)

Characters above. *Glumes* pointed, the point sometimes lengthened into a short awn.

(16. MELICA. Characters above.)



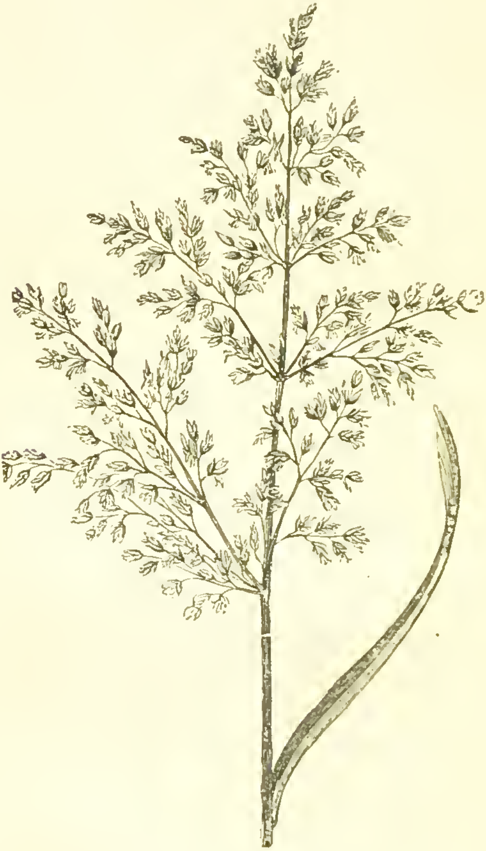
TRIODIA DECUMBENS (*Decumbent Triodia*).

38. TRIODIA.

1. *T. decumbens.*—A tufted perennial 6 inches to a foot high. An indication of the poverty of the soil; a heath and moor grass. Characters above. Fr. *Danthorne decombante*; Ger. *Liegende Siedlinge.*

39. HIEROCHLOE (*Holy-grass*).

1. *H. borealis.* Characters above. In Britain only near Thurso, in Caithness, where it has been recently found by Mr. R. Dick. Ger. *Wohlriechendes Marien-gras* (fragrant Mary-grass).



CATABROSA AQUATICA (*Water Catab ose*).

40. CATABROSA.

1. *C. aquatica* (Water Catabrose).—A glabrous, tender, pale-green perennial; *stem* procumbent, creeping or

floating at the base; *leaves* short, flat, and flaccid; *outer glume* very short and small; second larger, broad, and truncate; *flowering glume* scarious, slightly toothed or jagged, with prominent ribs. In ditches, margins of pools and ponds. Rather scarce, but distributed over the whole island. One of the sweetest of grasses; like liquorice. Water-fowl and cattle are fond of it; but it is only found in wet places, and is unsuitable for cultivation. Fr. *Catabrose aquatique*; Ger. *Wasser-Quellgras.*

BRIZA MEDIA (*Common Quake-grass*).

41. Briza (*Quake-grass*).

1 *B. media* (Common Quake-grass).—A very elegant perennial, near a foot to 1½ foot high; *panicle* 2 to 4 inches long, very loose and spreading; *spikelets* variegated with green and purple, containing 6 to 8 flowers. In meadows and pastures, common in Britain, scarce in the

POA AQUATICA (*Reed Meadow grass*).

north of Scotland. Fr. *Brize commune;* Ger. *Gemeines Zittergras.*

2. *B. minor* (Lesser Quake-grass).—An erect annual 2 or 3 inches to near a foot high; *panicle* more branched and more slender than *Briza media,* and *spikelets* more numerous. Southern counties of England, and near Cork and Kinsale in Ireland. Fr. *Brize fluette.*

42. Poa (*Meadow-grass*).

1. *P. aquatica* (Reed Meadow-grass).—A reed like perennial, 4 to 6 feet high; *root-stock* creeping; *leaves* flat and very rough on the edges; *panicle* much branched, spreading, nearly a foot long; *spikelets* numerous, with 5 to 8 or 10 flowers; *glumes* unequal, thin, 1-nerved; *flowering glumes* 1½ line long, loosely imbricated, strongly 5 or 7-ribbed, rather obtuse, scarious at the top. Frequent in England and Ireland, but rare in Scotland. Fl. summer. A conspicuons and imposing grass; a fine covert for waterfowl. (*Glyceria aquatica.*) Fr. *Glycérie flottante;* Ger. *Wasser Schwaden.*

2. *P. fluitans* (Floating Meadow-grass).—An aquatic perennial, 2 to 3 feet high or more; *stems* thick but weak; *leaves* often floating on the water; *panicle* erect and slender, about a foot long; *spikelets* few, ½ to 1 inch long; *flowers* 8 to 20; *glumes* unequal, thin, 1-nerved; *flowering glume* 1½ to 3 lines long, strongly 5 or 7-ribbed, scarious at top. Common in Britain. Fl. all summer. Fr. *Glycérie aquatique;* Ger. *Fluthende Schwaden.*

3. *P. maritima* (Sea Poa).—A perennial about a foot high; *stem* decumbent or erect; *panicle* erect, one-sided, 3 or 4 inches long or more; *spikelets* not numerous, containing 6 or 8 flowers. Frequent in maritime sands all round Britain.

4. *P. distans* (*Sclerochloa eu-distans*) (Reflexed Poa).—Very near Sea Poa, but *leaves* are flatter; *stems* taller and more slender; *panicle* one-sided, more spreading with long slender branches; *palea* not more than 1 line long. In the maritime counties of England, Ireland, and southern Scotland. Fl. summer. Fr. *Glycérie écartée;* Ger. *Abstehender Schwingel.*

5. *P. procumbens* (Procumbent Poa).—A tufted annual; *stems* decumbent, 6 or 8 inches long, or a little more; *leaves* flat; *panicle* one-sided, compact, about 2 inches

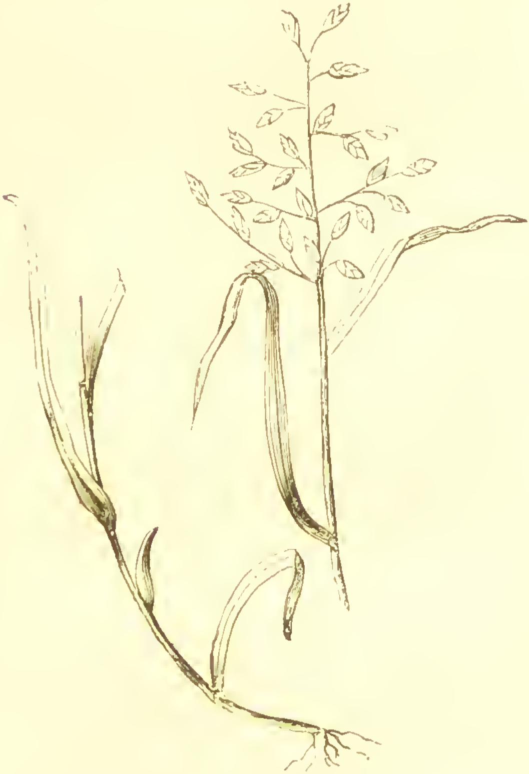
long; *spikelets* crowded, nearly sessile, about 4-flowered. Waste ground near the sea in various parts of England and Ireland. Fl. summer. Ger. *Niederliegender Schwingel.*

6. *P. rigida* (Hard Poa) (*Sclerochloa rigida*).—A tufted annual about 6 inches high; *stem* slightly decumbent; *panicle* lanceolate, one-sided, about 2 inches long, rather crowded; *spikelets* about 3 lines long, with about 6 to 8 flowers. Common in waste places in S. England and Ireland. Fl. summer. Ger. *Starren Schwingel.*

POA FLUITANS (*Floating Meadow-grass*).

7. *P. loliacea* (Darnel Poa) (*Sclerochloa,* Dwarf

Meadow-grass).—A tufted annual like the last, but usually smaller and stiffer; *panicle* almost a simple spike; *spikelets* nearly sessile in two rows, on alternate sides of axis, but all turning one way, about 3 lines long, with 6 to 8 flowers. On sandy seashores along the coasts of England and Ireland; very local in Scotland. Fl. summer. Fr. *Glycérie Ivraie.*



POA ANNUA (*Annual Meadow-grass*).

8. *P. annua* (Annual Poa).—A tufted annual usually about 6 inches high, with flat, flaccid, bright-green leaves; *panicle* loose and spreading, 1½ to 3 inches long; *spikelets* all stalked, oblong or linear, with 3 to 6 or rarely more

flowers; *flowering glume* scarious at top, keeled from the base, the lateral nerves slightly prominent when dry, with minute silky hairs on the keel. Very common in Britain, and abundant in some of the London parks. Fl. nearly the whole year round. Fr. *Pâturin naturel*; Ger. *Einjähriges Rispengras.*

9. *P. compressa.*—A perennial, seldom above a foot high; *root-stock* creeping; *stems* erect, flattened at base; *leaves* rather short with flattened sheaths, and a short obtuse ligula; *panicle* oblong, 2 to 3 inches long, slightly spreading but rather crowded with many of the spikelets sessile: *spikelets* ovate-oblong, usually 4 to 6-flowered, with occasionally a few woolly hairs on the axis; *flowering glume* about a line long, with minute silky hairs along the keel: *lateral nerves* not prominent. On dry barren ground and frequently on walls. Frequent in England, Ireland, and southern Scotland. Fl. all summer. Fr. *Pâturin comprimé*; Ger. *Zusammengedrucktes Rispengras.*

10. *P. pratensis* (Smooth Meadow-grass).—A perennial 1 to 2 feet high; *root-stock* creeping, or emitting creeping scions above ground. *Leaves* rather narrow with a short obtuse ligula; *panicle* 2 to 3 inches, with slender spreading branches; *spikelets* numerous ovate or oblong, all, or nearly all, stalked, each with about 4 flowers; *flowering glume* rather more than a line long, with minute silky hairs on the keel; *lateral nerves* scarcely prominent. Meadows and pastures, abundant in Britain. Fl. summer, commencing early. Fr. *Pâturin des prés*; Ger. *Wiesen Rispengras.*

11. *P. trivialis* (Roughish Meadow-grass).—Very near the last, but there are no creeping scions; the *stems* are usually taller and more slender; the ligula of the leaf longer; the *panicle* more slender, often 6 inches long, with slender spreading branches; *spikelets* with seldom more than 3 flowers, usually with 2; *flowering glume* as in the last, except that the lateral nerves are more conspicuous. Meadows and pastures; abundant in Britain. Fl. summer, commencing early. Fr. *Pâturin commun*; Ger. *Gemeines Rispengras.*

12. *P. nemoralis* (Wood Poa) (*P. cæsia, P. glauca, P. Parnelli, P. Balfourii*).—A perennial 1 to 2 feet high, tufted or slightly creeping at the base; erect, but weaker and more slender than the two last, with narrower *leaves,* their ligula very short; *panicle* contracted or

spreading, with slender branches; *spikelets* compressed, lanceolate or ovate, with 2 to 5 flowers, and scarcely any woolly hairs on the axis; *flowering glume* rather more than a line long, lanceolate, more pointed than in the last two species, with a line of silky hairs on each side, and another along the keel. In woods and shady places, and on moist mountain rocks. Frequent in Britain. Fl. summer. Fr. *Pâturin des bois*; Ger. *Hain Rispengras.*

POA PRATENSIS (*Smooth Meadow-grass*).

13. *P. laxa* (Wavy Meadow-grass) (*P. eu-laxa*).—An Alpine species, said to occur on Ben Nevis and Loch-

na-gar in Scotland. Near the next species, but more slender; with narrower and more numerous *leaves*; *panicle* loose, with few spreading branches: *spikelets* rather larger than in *P. Alpina*, from 1 to 3 on each branch of the panicle, ovate, each with 3 or 4 flowers; *glumes* more pointed than in most Poas. Fr. *Pâturin luxe*; Ger. *Schlaffes Rispengras*.

14. *P. Alpina* (Alpine Poa).—*Stems* tufted, often swollen at base, but not so much so as in the Bulbous Poa; 6 inches to 1 foot high; *leaves* short, rather broad; most of them radical or nearly so; *panicle* ovoid, about 2 inches long, rather spreading, with short but slender branches; *spikelets* crowded, 3 to 5-flowered; *flowering glume* pointed and keeled; lateral nerves not prominent, with a few minute silky hairs on the keel and edges, but with little or no wool at their base on the axis of the spikelet; frequently viviparous, the spikelets being converted into leafy bulbs. Abundant on the higher mountains of Scotland, Ireland, and northern England. Fl. summer. Fr. *Pâturin des Alpes*; Ger. *Gebirgs-Rispengras*.

15. *P. bulbosa* (Bulbous Poa).—A low, tufted perennial, seldom above 6 inches high, and remarkable for the bulbs formed by the swollen base of the stems and leaf-sheaths. *Panicle* ovoid or oblong, spikelike or scarcely spreading, not much above an inch long; *spikelets* ovate, 3 or 4-flowered; *flowering glume* about a line long, or rather more, pointed and keeled; lateral nerves not prominent, with minute silky hairs on keel and edges, and a few short woolly ones at their base on the axis of the spikelet. In dry waste places, roadsides, etc.; in Britain chiefly near the sea in the southern and eastern counties of England, but not recorded from Ireland or Scotland. Fl. spring. Fr. *Pâturin bulbeux*; Ger. *Zwiebeliges Rispengras*.

(32. FESTUCA. Characters above.)

43. MOLINIA.

1. *M. cærulea* (Purple Molinia).—A rather coarse stiff perennial, often 3 feet high; *leaves* chiefly radical, long and flat, rather stiff, and slightly hairy on the upper side; *panicle* narrow but loose, 6 inches to above a foot long, green or purplish; branches erect or scarcely spreading; *spikelets* erect, narrow and pointed, 2 to 4

lines long, usually with about 3 flowers; *glumes* acute (outer one shorter than the flowering glume), and rather unequal. Sometimes called Purple Melic; growing in dense circular tussocks in company with *Scabiosa succisa.* The stems are sold in bundles by tobacconists for cleaning pipes. In wet heathy places, moors and woods. Common in Britain. Fl. late summer.

CYPERACEÆ.—Sedges.

Flowers in spikelets (little green or brown spikes) consisting of *glumes*; each glume containing in its axil one flower; *stamens* 3, or rarely 2; *ovary* simple, 1-celled; *style* 2 or 3-cleft, simple; *fruit* a seed-like nut, flattened when the style is 2-cleft, triangular when 3-cleft; *stem* solid, triangular or round; *sheath of leaf* entire, not split as in the grasses.

* *Flowers monœcious.*

1. Carex.

Herbs mostly perennial, with grass-like *leaves* chiefly radical or from the lower part of the stem; *ovary* enclosed in a vase-shaped covering, the *style* protruding through an opening in the top; *stamens* 3, rarely 2; *glumes* imbricated all round the axis. (Name from Gr. κείρω, I shear or cut, in allusion to the sharp leaves.)

2. Kobresia.

Ovary partially enclosed in *glume*, but not in separate covering; *upper flowers* in each spikelet male, *lower flowers* female. (Named after Dr. Kobres of Augsburg.)

** *Flowers bearing stamens and ovaries under the same glume. Glumes in each spikelet arranged in two opposite rows.*

3. Schœnus.

Spikelets closely sessile in compact terminal heads, 2 to 4 perfect flowers in the upper glumes of each spikelet; 3 or 4 of the lower glumes of each spikelet smaller and empty; *stem* round. (Name from Gr. σχοῖνος, a cord. The first cordage is supposed to have been made from these plants.)

4. CYPERUS.

Spikelets many in a compound umbel. All the glumes in each spikelet, except the outer one, containing flowers; *stems* triangular, *glumes* arranged regularly in two opposite rows, giving the spikelet a flattened appearance. (Name from Gr. κύπειρος, a reed.)

*** *Flowers bearing stamens and ovaries under the same glume. Glumes in each spikelet imbricated all round the axis.*

5. BLYSMUS.

Spikelets sessile, in a terminal spike, arranged in two opposite rows. (Name from Gr. βλύζω, I gush out, from the species growing near springs and wet places.)

**** *Flowers bearing stamens and ovaries under the same glume. Glumes in each spikelet imbricated all round the axis. Several of the lower glumes in each spikelet smaller and empty; only two or three flowers at the top of each spikelet.*

6. CLADIUM.

Spikelets very numerous in a compound panicle; base of *style* conical; no hypogynous bristles. (Name from Gr. κλάδος, a branch or twig.)

7. RHYNCHOSPORA.

Spikelets several, in one or more clusters, forming terminal or axillary heads. *Hypogynous bristles* about 6, shorter than the glumes, and unequal. (Name from Gr. ῥύγχος, a beak, and σπορά, seed—the permanent base of the style forming a beak to the seed.)

***** *Flowers bearing stamens and ovaries under the same glume; glumes in each spikelet imbricated all round the axis; all the glumes of the spikelet, excepting one outer larger one, containing flowers.*

8. ERIOPHORUM.

Hypogynous bristles projecting from within far beyond the glume, and forming long cottony tufts. (Name from Gr. ἔριον, wool, and φέρω, I bear.)

9. SCIRPUS.

Hypogynous bristles 6 or fewer, shorter than the glumes, or none. (Name from Celtic word signifying a cord.)

SPECIES.

1. CAREX.

*

A large and well-defined genus; *flowers* monœcious, the *stamens* and *pistils* always in separate glumes, either in separate spikelets or in different parts of the same spikelet, which is then called mixed. It can be divided into 3 groups, depending partly on the relative position of the spikelets (or portions of spikelets) bearing stamens and those bearing pistils.

† *Spikelets solitary and terminal.*

†† *Spikelets several, the terminal one mixed, the rest bearing pistils only, or mixed.*

††† *Spikelets several, the terminal one or more bearing stamens only (rarely with a very few glumes bearing pistils at the base); the others bearing pistils only, or mixed.*

†

1. *C. dioica* (*Diœcious Carex*).—*Spikelets* bearing stamens only or pistils only, and with stamens and pistils on different plants; a slender plant, 6 or 8 inches high; *leaves* very narrow; *spikelets* brown; *styles* 2-cleft. Common in Scotland and northern England, and Ireland; very rare in the south. Fl. early summer. Fr. *Carex dioïque*; Ger. *Zweihäusige Segge.*

2. *C. pulicaris* (Flea Sedge).—Small tufted species, not creeping, 3 to 6 inches high; *leaves* narrow; *spikelet* about 9 lines long, the upper half bearing stamens; 3 to 7 of the lower glumes bearing pistils; *style* 2-cleft; *fruit* oblong, pointed, spreading when ripe, contracted at base, near 2 lines long. Generally spread over Britain. Fl. early summer. Fr. *Carex puce*; Ger. *Floksamige Segge.*

3. *C. rupestris* (Rock Sedge).—*Root-stock* creeping; *leaves* in tufts, broader than in *C. pulicaris*; *stems* 3 to 6 inches high; *spikelet* linear, mixed; *style* 3-cleft; *fruit* obovoid. In Britain on the higher mountains of Scotland. Fl. summer. Fr. *Carex des roches*; Ger. *Felsen Segge.*

4. *C. pauciflora* (Few-flowered Sedge).—A slender species, with long creeping runners; *stem* loosely branched, under 6 inches high; *leaves* narrow; *spikelets* pale brown, 3 or 4 lines long; *flowers* few, the 2 or 3 uppermost bearing stamens only, the 2 or 3 lower pistils only; *styles* 3-cleft; *fruit* narrow and pointed. Rather frequent in Scotch Highlands, local in northern England. Fl. summer. Fr. *Carex à quatre fleurs*; Ger. *Wenigblüthige Segge.*

CAREX LEPORINA (*Oval-spiked Sedge*).

5. *C. humilis* (Dwarf Silvery Sedge). *Flower stems* 3 to 5 inches high; *terminal spikelet* bearing stamens only, about 9 lines long; 3 or 4 much smaller ones bearing

pistils only; stalked, placed at intervals on the stem, scarcely protruding from scarious sheath of bracts; *glumes* scarious at the edges; *styles* long and 3-cleft; *fruit* ovoid, obtuse, ribbed, slightly downy. Wilts, Somerset, Gloucester, Hereford. Fl. spring. Fr. *Carex clandestin*; Ger. *Niedrige Segge.*

††

6. *C. leporina* (*ovalis*) (Oval-spiked Sedge).—*Stems* a foot or more high, loosely tufted at base; *root-stock* short, horizontal; *spikelets* 4 to 6, sessile, distinct, but close together, ovoid, brownish-green and shining, about 4 lines long; *flowers* mostly bearing pistils only, with a few bearing stamens at the base of each spikelet; *outer bracts* like the glumes, or the lowest rarely with short leafy point; *styles* 2-cleft; *fruit* flat, with a scarious wing round the edge. Generally diffused over Britain. Fl. summer, rather early. Fr. *Carex leporina*; Ger. *Hasenpfoten Segge* (Haresfoot Sedge).

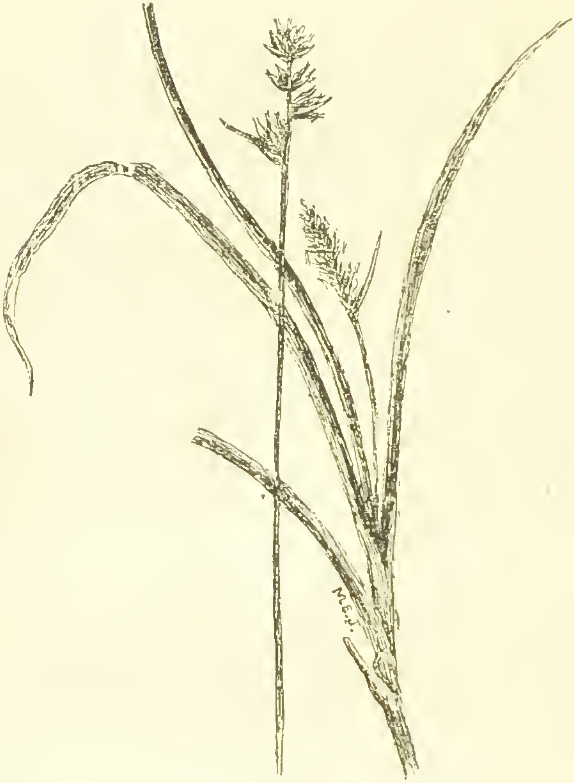
7. *C. lagopina* (*leporina*).—Very like *C. leporina*, but smaller, about 8 or 9 inches high; *spikelets* 3 or 4; *fruit* not winged. Only in a few localities in the Scotch Highlands, near Aberdeen.

8. *C. elongata* (Elongated Sedge).—*Stems* about 2 feet high, tufted; *leaves* rather long; *spikelets* 4 to 6 (about), some distance apart, greenish brown; *ripe fruit* 2 lines long, spreading, projecting beyond glumes, not winged. Rare in Britain. Fl. early summer. Fr. *Carex alongé*; Ger. *Verlängerte Segge.*

9. *C. stellulata* (Star-headed Sedge).—Rarely above 5 or 8 inches high, tufted; *leaves* shorter than stems; *spikelets* 3 or 4, some distance apart, except sometimes the two uppermost, oval-oblong, about 3 lines long; *ripe spikelets* nearly globular; *fruit* beaked, about 2 lines long, edges slightly rough, spreading; *styles* 2-cleft; upper half of terminal spikelet consisting of flowers bearing pistils only, lower half stamens only; a few *flowers* bearing stamens at base of the other spikelets. Frequent in Britain. Fl. spring or early summer. Fr. *Carex étoilé*; Ger. *Stern-förmige Segge.*

10. *C. carescens* (*curta*) (Whitish Sedge).—*Stems* tufted, a foot or more high; *leaves* rather long; *spikelets* 4 to 6, some distance apart, 3 or 4 lines long, pale green;

fruit not longer than the glumes, rounded at top, with a small point, but not tapering into a beak; *styles* 2-cleft; a few *flowers* bearing stamens at the base of most of the spikelets. In many parts of Britain, but not general. Fl. early summer. Ger. *Weissgraue Segge.*

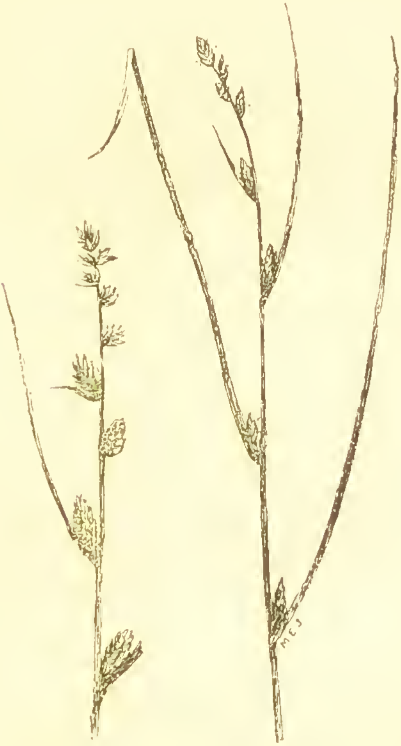


CAREX STELLULATA (*Star-headed Sedge*).

11. *C. remota* (Distant-spiked Sedge).—*Stems* slender, a foot high or more; *spikelets* small, pale, a considerable distance apart, the lower ones each in the axil of a long leafy bract; the terminal spikelet has *flowers* bearing stamens in the lower half, the others only a few bearing

stamens at the base, the lowest often entirely consisting of flowers bearing pistils only. Frequent in England and Ireland, less so in Scotland. Fr. *Carex espacé.*

12. *C. axillaris* (Axillary Sedge) (*C. Bœnninghauseniana*, Ger. *Zittergrasartige Segge*).—A rather tall species; *stems* leafy, often 2 feet high; *spikelets* a considerable distance apart, axillary, but not so distant as in Remote Sedge, and the lowest spikelet is either branched, or there are 2 or 3 together, sessile or shortly stalked; a few *flowers* bearing stamens at top of terminal spikelets, and usually a few at the base of most of them; *inflorescence*



CAREX REMOTA (*Distant-spiked Sedge*).

more slender than in Panicled Sedge; *lower bract* very leafy; *fruit* flattish, with acute edges. Very local in England and Ireland; not known in Scotland. Fl. early summer. Ger. *Seitenständige Segge.*

13. *C. paniculata* (Panicled Sedge).—A stout species, forming large tufts; *stems* 1 to 3 or 4 feet high, more or less triangular, but never so much so as in the Fox Sedge (14), than which also the plant is generally more slender; *spikelets* numerous, brown, crowded into a compound spike or panicle, sometimes 4 or 5 inches long, the lower branches spreading and an inch long, sometimes more contracted; *spikelets* sessile, mostly with a few flowers bearing stamens only at the top; *outer bracts* scarious at the edges, the lowest sometimes with short fine points; *styles* 2-cleft; *fruit* ovate, beaked, marked on the inner face with several longitudinal veins. Generally distributed over Britain. Fl. early summer. Fr. *Carex paniculé*; Ger. *Rispige Segge.*

A small variety is named *Carex teretiuscula* (Lesser Panicled Sedge), the panicle of which is almost contracted into a spike about an inch long. Fr. *Carex arrondi*; Ger. *Rundliche Segge.*

Between this last and the ordinary form of *C. paniculata* are numerous intermediate varieties, sometimes called species under the name of *C. paradoxa.* Fr. *Carex changeant*; Ger. *Abweichende Segge.*

14. *C. vulpina* (Fox Sedge or Great Sedge).—A stout tufted plant, 2 to 3 or 4 feet high; *leaves* broad, not very long, ending in a sharp point; *stem* sharply triangular, with broader sides than *C. paniculata*; *spikelets* numerous, green or pale brown, crowded into a spike of 1 or 2 inches, which is compound and interrupted at the base; *spikelets* ovoid, many flowered, the upper flowers bearing stamens only; *styles* 2-cleft; *fruit* much flattened, beak rather broad, green or pale brown. Frequent in England, more scarce in Scotland. Fr. *Carex compacte*; Ger. *Fuchsbraune Segge.*

15. *C. muricata* (Prickly Sedge).—About a foot high: *spikelets* about 6, rather short, brown or shining green, with a few *flowers* bearing stamens only at the top of each, crowded into a terminal spike about an inch long, or the lower ones rather more distant; *fruit*, when ripe, rather large, pointed and spreading. England, Ireland, and southern Scotland; not uncommon. Fl. early summer. Fr. *Carex des haies*; Ger. *Sperrfrüchtige Segge.*

Variety.—*C. divulsa* (Grey Sedge).—*Stems* longer; *spikelets* paler, more distant, forming an interrupted spike of 2 or 3 inches. Fr. *Carex interrompu*; Ger. *Zerrisscne Segge.*

16. *C. arenaria* (Sand Sedge).—*Root-stock* long, and creeping in the sand, emitting small tufts or single stems a few inches to a foot or more high, leafy at base; *spikelets* rather large, ovoid, simple and sessile in a spike of 1 or 2 inches; *flowers* bearing stamens only often numerous in the upper and intermediate spikes, very few at the top of the lowest; *fruit* much flattened, beaked and winged.

CAREX ARENARIA (*Sand Sedge*).

In maritime sands; abundant in Britain. Fl. all summer. Fr. *Carex des sables;* Ger. *Sand-Segge.*

C. disticha (or *intermedia*) is an inland variety, usually taller, more slender, and more leafy.

17. *C. divisa* (Bracteated Marsh Sedge).—*Root-stock* creeping, hard; *stems* short, slender, erect; *spike* ovoid, about ½ an inch long; *spikelets* few, short, crowded, distinct; all, especially the upper, with several *flowers* bearing stamens only at the top; *styles* 2-cleft; *fruit* scarcely flattened, not winged, beak varying in length. In Britain frequent on the sea-coast and in marshes on some of the eastern and southern coasts of England and Ireland. Fl. early summer.

18. *C. incurva* (Curved Sedge).—*Root-stock* creeping; *stems* 2 or 3 inches high, often curved; *leaves* rush-like, curved, about same length; *spike* nearly globular, very dense; *spikelets* 3 or 4, each with a few flowers bearing stamens only at the top; *styles* 2-cleft; *fruit* broad, rather inflated, tapering into short beak projecting beyond glumes; a northern species. In Britain only on sandy sea-shores of northern Scotland.

19. *C. Buxbaumii* (Hoary Sedge).—The only locality in Britain is an island in Lough Neagh. *Root-stock* shortly creeping; *stems* often densely tufted, 1 to 2 feet high: *leaves* rather long; *spikelets* usually 4, in a loose spike, the terminal one with flowers bearing stamens only at the base, the others all with flowers bearing pistils only, and sessile, or the lowest on a short stalk; *lowest bract*, and sometimes the next also, leafy; *glumes* dark brown, mostly pointed; *styles* 3-cleft; *fruit* almost flat, of a pale colour, not beaked. Fr. *Carex de Buxbaum;* Ger. *Buxbaum Segge.*

20. *C. Alpina* (Alpine Sedge).—A rather slender species, 6 inches to 1 foot high, tufted or shortly creeping, with short *leaves* *Spikelets* about 3, close together, ovoid, black or dark-brown, the terminal one hairy, with a few flowers bearing stamens only at the base; the other two spikelets with flowers bearing pistils only, the lowest stalked, and in the axil of a leafy bract; *styles* 3-cleft; *fruit* green, obtusely triangular, shortly beaked, projecting beyond the glume. Fl. summer. In Britain only in the Clova mountains in Scotland.

21. *C. atrata* (Black Sedge).—An Alpine species. *Stems* loosely tufted ½ to 1½ foot high; *leaves* broad and flaccid:

spikelets 3 or 4, oblong, very black or dark-brown, 8 or 9 lines long, the terminal one with a few flowers bearing stamens only at the base, or irregularly mixed, the others with flowers bearing pistils only, or nearly so; *outer bract* leafy; *styles* 3-cleft; *fruit* dark and shiny,

CAREX CŒSPITOSA (*Tufted Sedge*).

flat when young, very acutely triangular when ripe, with a short point. On some of the Scotch Highlands and on Snowden. Fr. *Carex en deuil;* Ger. *Schwärtzliche* Segge. Fl. summer, rather early.

22. *C. Pseudo-cyperus* (Cyperus-like Sedge). — *Stems* tall, stout, and triangular; *leaves* broad and long; *spike-*

lets not more than 2 inches long, cylindrical, green, stalked, drooping when in fruit, the terminal one with flowers bearing stamens only, but with often a few bearing pistils only in the upper part; *glumes* narrow, pointed, green; *fruit* narrow, striated, spreading, with long, pointed, slender beak; *styles* 3-cleft. Not very common. Fl. early summer. Fr. *Carex faux souchet*; Ger. *Cypergrasähnliche Segge.*

†††

(12) *C. axillaris* (*Bœnninghauseniana*). (*Vide supra.*)

23. *C. saxatilis* (*C. Pulla*) (*C. Grahami*) (Russet Carex). —An Arctic species; only on the higher Scotch mountains. *Root-stock* creeping, the scaly runners ending in tufts of leaves; *stems* 8 inches to a foot or more high, leafy; *spikelets* about 3 or 4, distant, the lower 3, 2, or 1, with flowers bearing pistils only, ovoid, dark brown, 6 or 8 lines long, the lowest on slender stalk, with a leafy bract at base; *styles* 2-cleft; *fruit* ovoid, inflated, with a very short point. Fl. summer.

24. *C. cæspitosa* (Tufted Sedge).—A very variable species; but (with 25. *C. acuta*) known by 2-cleft *styles* and almost flat *fruit*. *Root-stock* with creeping runners; *stems* often densely tufted. In dry soils the stems may be scarcely six inches high, and the leaves shorter; in rich swamps the stems may attain 4 feet, with leaves almost as long. *Spikelets* 3 to 6, from ½ to 1½ inch long, the terminal one, and upper portion or whole of the next with flowers bearing stamens only, the remainder with flowers bearing pistils only, the lowest usually stalked, and 1 or 2 of the outer bracts leafy; *glumes* dark-brown or black, often with green midrib. Fl. spring or summer.

The principal forms in Britain often considered as species, are the following:—

(1) *C. rigida* (Stiff Mountain Sedge).—A dwarf Alpine form, scarcely 6 inches high; with short, flat, rigid leaves. Fr. *Carex de Frimas* (cold fog); Ger. *Starre Segge.* Fl. spring and summer.

(2) *C. vulgaris* (Common Tufted Sedge).—Usually 1 to 3 feet high, including many intermediate forms connecting the preceding and following species. Fr. *Carex commune*; Ger. *Gemeine Segge.*

(3) *C. stricta* (Densely-tufted Sedge).—Usually about 2 feet high. More glaucous and tufted; *leaves* narrow; rather long spikelets; *fruit* more distinctly arranged in 8 or 9 rows, nerves more strongly marked. In open situations. Fr. *Carex raide;* Ger. *Steife Segge.*

(4) *C. aquatilis* (Water Sedge).—A tall, leafy form, with slender *spikelets.* In very wet situations. Not common in Britain; said to occur in the Scotch Highlands.

25. *C. acuta* (Slender-spiked Sedge).—This may be a luxuriant variety of *C. cæspitosa.* It is 2 or 3 feet high; *leaves* long, flaccid; *fruiting spikelets* often 3 inches or more; *glumes* all narrow and acute; *fruit* rather narrow. Fl. spring and early summer. In wet places; not uncommon in Britian. Fr. *Carex aigu;* Ger. *Spitzkantige Segge.*

(5) *C. humilis.* (*Vide supra.*)

26. *C. digitata* (Fingered Sedge).—Densely tufted, 6 inches to a foot high; *leaves* short; *barren spike,* about 6 lines long, is terminal, but the upper fruiting spike exceeds it in length; the other 2 or 3 fruiting spikes, shortly stalked, are spreading, and give the plant a digitate appearance; *flowers* in each spikelets at some distance from each other; *bracts* brown and sheathing; *styles* 3-cleft; *fruit* obovoid, and minutely downy. Rare in Britain, and only in the hilly limestone districts of western and north-central England. Fl. spring. Fr. *Carex digité;* Ger. *Gefingerte Segge.*

27. *C. pilulifera* (Pill-headed Sedge).—*Stem* 6 inches to 1 foot high, forming broad tufts; *leaves* shorter than stem, weak and flexible; *fruiting spikelets* 2 or 3 short and compact, close under the terminal barren one; *bracts* leafy, unusually short without sheaths; *glumes* brown, more or less pointed; *styles* 3-cleft; *fruit* small, obovoid or nearly globular, scarcely beaked, covered with a minute down. Hilly pastures and moors. Common in Britain. Fl. early summer. Fr. *Carex à pilules;* Ger. *Pillentragende Segge.*

28. *C. præcox* (Vernal Sedge).—Near the Pill-headed Sedge, but *leaves* shorter and stiffer; *spikelets* less compact; *barren spikelets* larger; *glumes* more obtuse, but with distinct fine point; *fruit* shortly beaked, minutely downy. In dry pastures, generally distributed over Britain. Fl. spring. Fr. *Carex précoce;* Ger. *Frühzeitige Segge.*

29. *C. montana* (Mountain Sedge).—Very near the Pill-headed Sedge, but the *bracts* have scarcely any leafy points; the *fruiting spikelets* are shorter, the *glumes* darker; *fruit* twice as long, with acute angles, hairy. In Britain, said to have been found in Sussex and near Chepstow. Fl. spring. Fr. *Carex de montagne;* Ger. *Berg Segge.*

CAREX PILULIFERA (*Pill-headed Sedge*).

30. *C. tomentosa* (Downy-fruited Sedge).—In Britain only known from a single locality near Merston in Wiltshire. *Root-stock* creeping; *stem* slender, erect, a foot high or more; *leaves* narrow, erect, short; terminal *barren spike-*

let about an inch long; *fruiting spikelets* 1 or 2, at some distance, oblong, erect, nearly sessile, rather more than ½ an inch long, compact with small brown glumes; *lower bract* leafy; *styles* 3-cleft; *fruit* small, ovoid, or nearly globular, not beaked, downy. Fl. early summer. Fr. *Carex cotonneux*; Ger. *Filsfrüchtige Segge.*

31. *C. hirta* (Hairy Sedge).—*Stems* weak, leafy, 1 to 2 feet high, and, as well as the leaves, more or less hairy; terminal *barren spikes* 1 or 2; *fruiting spikelets* very distant, cylindrical, rather loose, an inch or more long; *fruit* tapering into long beak, covered with short spreading hairs. Frequent in Britain. Fl. spring and early summer. Fr. *Carex hérissé*; Ger. *Kurtzhaarige Segge.*

32. *C. filiformis* (Slender Sedge).—*Root-stock* creeping; stems 1 to 2 feet high; *leaves* long and narrow; *barren spikelets* usually 2 or 3; terminal one about 1½ inch long; *fruiting spikelets* 1 or 2, remote from them, nearly sessile; 6 to 9 lines long; *styles* 3-cleft; *fruit* near two lines long, ovoid, shortly beaked and very downy. Not common in Britain; found chiefly in the north and in Ireland. Fl. spring. Fr. *Carex filiforme*; Ger. *Fadenförmige Segge.*

33. *C. pallescens* (Pale Sedge).—*Stems* tufted, leafy at the base, seldom above a foot high; terminal *spikelet* barren, light brown, about 6 lines long; *fertile spikelets* 2 or 3, pale yellowish green, shortly stalked, erect or slightly drooping, oblong, shorter than the barren one, and at short distances below it; *bracts* leafy; *styles* 3-cleft, *fruit* glabrous obtuse. Fl. early summer. Not common in England; more frequent in Scotland and Ireland. Fr. *Carex Pâle*; Germ. *Blasse Segge.*

34. *C. extensa* (Long-bracteated Sedge).—Tufted, rather slender, 1 to 2 feet high; *leaves* narrow, stiff, erect, often convolute; *spikelets* nearly sessile, near together at top of stem, or only the lower one distant, oblong, brown-green; *bracts* long, narrow, leafy, the lowest much longer than the stem; *styles* 3-cleft; *fruit* ovoid, triangular, strongly-nerved, tapering into a conical beak. A sea-coast plant, general round the British Isles. Fl. early summer. Fr. *Carex étiré*; Ger. *Ausgedehnte Segge.*

35. *C. flava* (Yellow Sedge).—Usually densely tufted and leafy, seldom a foot high, acquiring frequently a yellowish hue, especially the fruiting spikelets; terminal *barren spikelet* 6 to 9 lines long; *fruiting spikelets* 1, 2, or 3,

sessile or shortly stalked, and very near the terminal one, and often 1 much lower down on a longer stalk, all erect, ovoid, and when ripe nearly globular; *bracts* all leafy and sheathing; *styles* 3-cleft; *fruit* ovoid, nerved, beaked, spreading. Fl. spring and summer. Fr. *Carex jaune;*

CAREX DISTANS (*Distant Sedge*)

Ger. *Gelbe Segge.* Generally diffused over Britain. The distance of the lower spikelets from the upper ones, and the size of the fruit, varies much.

Variety.—*C. Œderi.—Fruit* smaller, with short beaks; characters inconstant. Fr. *Carex d'Œder;* Ger. *Œder's Segge.*

36. *C. distans* (Distant Sedge).—*Stems* rather tufted,

slender, 1 to 2 feet high; *leaves* flat, rather narrow, short; *spikelets* few and far apart. The terminal barren (sometimes with a small one close to it), the others fruiting, ½ to 1 inch long, stalked, but sometimes appearing sessile, the stalks being enclosed in the sheaths of the leafy bracts; *glumes* brown; *styles* 3-cleft; *fruit* dark green, or sometimes yellowish, erect, nerved or ribbed, tapering into rather a long beak. The length of stalk of lower spikelets varies much, as well as the prominence of the ribs of the fruit. Fl. summer. Common in Britain. Fr. *Carex espacé.*

Varieties, sometimes considered as species:—

(1) *C. fulva* (Tawny Distant-Sedge).—*Spikelets* short, pale; *fruit* rather long beaked. Fr. *Carex fauve*; Ger. *Hornschrich's Segge.*

(2) *C. depauperata* (Starved Wood-Sedge).—Has only 4 or 5 fruits to the spikelet, somewhat inflated, with very long beak. Fr. *Carex appauvri.*

(3) *C. binervis* (Two-nerved Distant-Sedge).—*Spikelets* darker, *fruit* more angular. Fr. *Carex à deux nervures*; Ger. *Zwei-nervige Segge.*

(4) *C. lævigata* (Smooth-stalked Distant-Sedge).—Like the last, but the slender green spikelets often 1 to 1½ inch long.

37. *C. punctata* (Dotted-fruited Sedge).—Very like last, but the fruit are without ribs except at the 3 angles. Fl. summer. Not common. Fr. *Carex ponctué.*

38. *C. panicea* (Pink-leaved Sedge) (Carnation-grass).—*Stems* tufted, 1 to 1½ foot high, with creeping runners; *leaves* rather short, erect, flat, glaucous; *spikelets* usually 3, the terminal one barren, the others fruiting, distant, erect, stalked ½ to 1 inch long, often loosely imbricated, the *flowers*, especially the lowest, some distance apart; *bracts* short, leafy, with sheaths; *glumes* brown; *styles* 3-cleft; *fruit* ovoid, triangular, smooth, shortly pointed. Common. Fl. early summer.

Alpine variety, *C. vaginata* (Short Brown-spiked Sedge).—Ger. *Locker-blüthige Segge.*

39. *C. capillaris* (Capillary Sedge).—*Stems* slender, densely tufted, 3 to 9 inches high, longer than the leaves; terminal *barren spikelet* small; *fruiting spikelets* 2 or 3, lower down, but on long hair-like peduncles, sometimes taller than the terminal one, pale-coloured, loose flowered, seldom 6 lines long; *bracts* short, leafy; *glumes* very

scarious on edges; *fruits* 10 to 12 in each spikelet, beaked, tapering; *styles* 3-cleft. Frequent in Scotch Highlands. Fl. summer. Fr. *Carex capillaire*; Ger. *Haarhalmige Segge.*

CAREX PANICEA (*Pink-leaved Sedge*)

40. *C. limosa* (Mud Sedge).—*Stem* slender, 3 inches to a foot high; *leaves* narrow, as long as or shorter than the stem; *barren spikelets* ½ to near 1 inch long; *fertile spikelets* 1 or 2 on slender stalks, drooping, 6 to 8 lines

long; *bracts* leafy; *glumes* rather dark brown, ovate, upper ones pointed; *styles* 3-cleft; *fruit* rather large, roundish, compressed, not beaked. Scotland, Ireland, northern England.

41. *C. glauca* (Glaucous Sedge).—*Stems* 6 inches to 1½ foot; *leaves* erect, as long as the stems, very like 38, but with 2 or 3 *barren spikelets*; the 2 or 3 *fruiting* ones are rather more compact and on longer stalks, ½ to 1 inch long; *glumes* dark-brown; *styles* 3-cleft; *fruit* ovoid, triangular, not beaked. Common. Fl. early summer. Fr. *Carex glauque*; Ger. *Meer-grüne Segge* (Sea-green Sedge).

CAREX GLAUCA (*Glaucous Sedge*).

42. *C. sylvatica* (Wood Sedge).—*Stems* weak, tufted, leafy, 1 to 2 feet high; *leaves* flaccid; *bracts* leafy with long sheaths; *terminal spikelet* barren, about 1 inch long, and sometimes 1 or 2 of the next spikelets are partially or wholly barren; *fruiting spikelets* distant, loose flowered, an inch or more long, on slender stalks; *glumes* green, narrow, pointed; *styles* 3-cleft; *fruit* glabrous, ribbed, tapering into long beak. Frequent except in the north of Scotland. Fl. early summer. Fr. *Carex des bois*; Ger. *Wald-Segge.*

43. *C. strigosa* (Loose-spiked Wood-Sedge).—Very near the last, but the *fruiting spikelets* are usually above 2 inches long, more slender, the *flowers* some distance apart, the *flower-stalks* much shorter; *fruit* tapering to a point. Fl. early summer. In many parts of England and Ireland, not in Scotland. Fr. *Carex à épes grêles*; Ger. *Schlankärige Segge* (Slender-spiked Sedge).

(22) *C. pseudo-Cyperus* (Cyperus-like Carex) (*vide supra*, No. 22).—The terminal *barren spikelet* sometimes has a few flowers bearing pistils at the top, sometimes in the whole upper half.

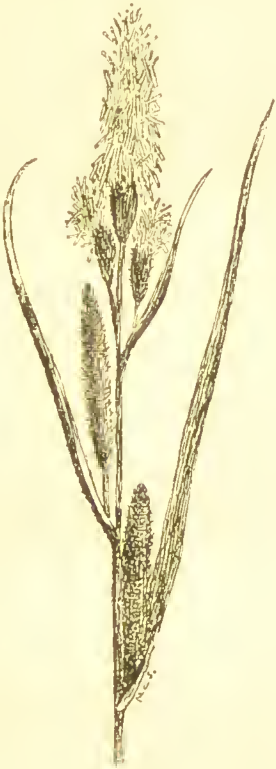
44. *C. pendula* (Great Pendulous Sedge).—*Stems* stout, triangular, leafy, 3 to 5 feet high; *leaves* long, nearly ½ inch broad; *spikelets* 4 to 6 inches long; *fruiting spikelets* 3 or 4 at some distance from the barren, their stalks almost concealed in the sheaths of the long leafy bracts; *glumes* ovate-lanceolate, brown, with green centre; *styles* 3-cleft; *fruit* small, crowded, ovoid, with very short beak. Scattered over England, Ireland, and southern Scotland. Fl. early summer. Fr. *Carex à épes pendants*; Ger. *Hängende Segge.*

45. *C. ampullacea* (Bottle Sedge).—*Stems* stout, tufted, scarcely angled, 1 to 3 feet high; *leaves* long; *spikelets* 1 to 2 inches long or even more; *barren spikelets* 2 or 3, terminal one longest; *fruiting spikelets* 2 or 3, erect, compact, lowest shortly stalked; *leafy bracts* rather long, without sheaths; *styles* 3-cleft; *fruit* ovoid, inflated, with rather long beak, spreading. Fl. early summer. Generally spread over Great Britain. Fr. *Carex ampoulé*: Ger. *Geschnäbelte Segge.*

46. *C. vesicaria* (Bladder Sedge).—Very near the last, but *stem* is more angular; *spikelets* rather shorter, and *fruits* although inflated, are more conical, tapering more gradually into the beak. Less frequent than the

last, and not extending so far north. Fl. spring and early summer. Fr. *Carex en vessie;* Ger. *Blasen-Segge.*

47. *C. paludosa* (Pond Sedge).—*Stems* stout and triangular, 2 to 3 feet high; *root-stock* creeping; *leaves* long; *barren spikelets* 2 or 3, above an inch long, sessile; *fruiting spikelets* 2 or 3, rather distant, often 2 inches long, sessile, or the lowest shortly stalked; *bracts* leafy without sheaths; *glumes* rather pointed; *styles* 3-cleft; *fruit* ovate, slightly triangular, but much flattened, tapering into a very short spreading beak. Frequent in the south, less



CAREX PALUDOSA (*Pond Sedge*).

so in the north. Fl. spring and early summer. Fr. *Carex des marais*; Ger. *Sumpf-Segge.*

A taller variety is named *C. riparia* (Greater Pond Sedge).—The *fruiting spikelets* are longer, on longer stalks, the *glumes* more pointed, the beak of the *fruits* more distinct. Rather more frequent than *C. paludosa.* Fr. *Carex des rives*; Ger. *Ufer Segge.*

*

2. KOBRESIA.

1. *K. caricina* (Sedge-like Kobresia).—In mountainous moorlands; only in a few localities in Perthshire and the north of England. A low, densely tufted plant; *stems* seldom above 6 inches high; *leaves* radical, sheathing, much shorter than the stems; *spikelets* 4 or 5, short and brown, closely sessile in short terminal spike; the *lower flowers* in each spikelet bear pistils only; *style* long, 3-cleft; the *upper flowers* of terminal spikelet, and usually 1 terminal flower of lateral spikelets bears stamens only.

**

3. SCHŒNUS.

1. *S. nigricans* (Black Schœnus).—*Stems* stiff, tufted, rush-like, about a foot high; *spikelets* several, dark shining brown; *heads* ½ inch in diameter, with an involucre of 2 or 3 broad brown bracts, one or more of which has a stiff leaf-like point ½ to 1 inch long; *glumes* near 3 lines long, pointed, with a prominent keel, and rough on the edge. In bogs, spread over a great part of Britain, chiefly in the west. Fl. summer. Fr. *Choin noirâtre*; Ger. *Schwartzliches Kopfried.*

4. CYPERUS.

1. *C. longus* (Sweet Galingale).—*Stems* 1 to 3 or 4 feet high, stout; a few leaves at the base; *leaves* of involucre very long, unequal; central ray of *umbel* very short, the others from 1 to 2 or 3 inches long, each bearing simple or branched clusters of 6 to 12 or more spikelets; *spikelets* linear, pointed, flattened, about ½ inch long; *glumes* numerous, blunt, light brown, with green keel. In wet meadows, only in some of the southern counties of

England. Fl. late summer. The roots were once much esteemed as an aromatic tonic. Fr. *Souchet long.*

2. *C. fuscus* (Brown Cyperus).—*Stems* short, tufted, grass-like, a few inches to near a foot high; *leaves* of involucre unequal, the longest from 2 to 4 inches; *umbel* compact; *spikelets* flattened, blunt, not more than 3 lines long; *glumes* dark brown. Only in two localities, Middlesex and Surrey. Fl. late summer. Fr. *Souchet brun*; Ger. *Schwartzbraunes Cyperus.*

BLYSMUS RUFUS.

5. BLYSMUS.

1. *B. compressus* (Broad-leaved Blysmus).—6 to 8 inches high; *root-stock* creeping; *leaves* broad and shorter than stem; *spike* about an inch long; *spikelets* 10 to 12, oblong, each about 3 lines long; *glumes* about 8, lowest often empty; *stamens* usually 3, with 3 to 6 small hypogynous bristles; nut tapering into 2-cleft style. Occurs in many parts of Britain. Fl. summer. Ger. *Zusammengedrückte Simse.*

2. *B. rufus* (Narrow-leaved Blysmus).—6 inches to near a foot high; *leaves* few, narrow, short, channelled or cylindrical; *spike* 6 to 9 lines long; *spikelets* about 6, nearly black, each with 2 to 4 flowers, almost covered by outer *bract*, which is brown, shining, about 3 lines long; *stamens* 3; *hypogynous bristles* minute or wanting. Not uncommon in the north and west of Britain. Ger. *Braune Simse.*

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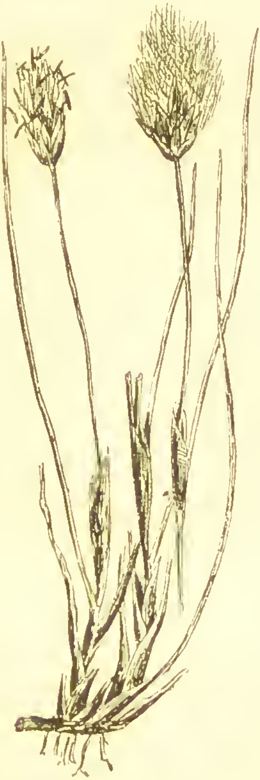
6. CLADIUM.

1. *C. mariscus* (Prickly Fen Sedge).—3 to 6 feet high; *root-stock* creeping; *leaves* smooth and sheathing at base, then keeled, ending in a point; keel and edges bordered by minute sharp teeth; *spikelets* pale-brown, in small numerous clusters, arranged in panicles in the upper axils; the whole forming terminal leafy panicle a foot or more long; *spikelets* 2 or 3 lines long, rather pointed; *stamens* usually 2; nut tapering at top. Local. Fl. late summer. This plant used to be so common in undrained fens near Cambridge, that it was used in that town for lighting fires; it was also used for thatching. It forms floating islands in pools, and is still cut as a crop in the Fens. Fr. *Cladie marisque;* Ger. *Deutsche Schneide.*

7. RHYNCHOSPORA (*Beak-Sedge*).

1. *R. fusca* (Brown Beak-Sedge).—6 to 10 inches high; *leaves* few, subulate, upper ones projecting beyond flowers; *spikelets* brown, usually in two clusters, one terminal, the other on pedicel in axil of the next leaf; about 2½ lines long. Southern and western England and Ireland, in spongy bogs; very rare. Ger. *Braune Moorsimse.*

2. *R. alba* (White Beak-Sedge).—6 to 9 inches high in dense grass-like tufts; *spikelets* nearly white, in a small terminal cluster, often with one or two smaller clusters in the axils of the next leaves; *spikelet* 2 to 2½ lines long; *hypogynous bristles* about 12. Generally distributed. Fl. summer and autumn. Ger. *Weisse Moorsimse.*

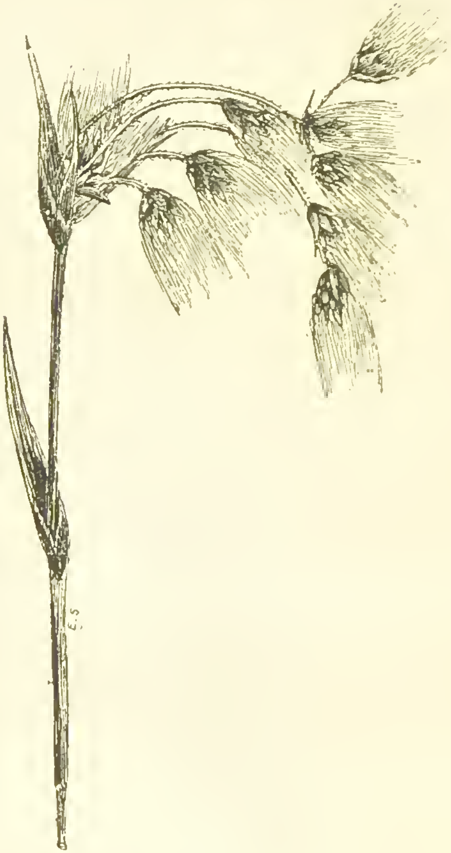


ERIOPHORUM VAGINATUM (*Sheathing Cotton-Sedge*).

8. ERIOPHORUM (*Cotton-Sedge*).

1. *E. Alpinum* (Alpine Cotton-Sedge).—A plant resembling *Scirpus cæspitosus* in every respect but the long

hypogynous bristles. Now supposed to be extinct in Britain. Fr. *Linaigrette des Alpes*; Ger. *Gebings Wollgrass.*



ERIOPHORUM POLYSTACHYUM (*Common Cotton-Sedge*).

2. *E. vaginatum* (Sheathing Cotton-Sedge, Hare's-tail Cotton-Sedge).—*Stems* tufted, a foot or more high; *leaves* linear, growing from ragged sheaths; *spikelets* solitary; *terminal*, ovoid, 6 to 8 lines, deep green; *hypogynous*

bristles very numerous, forming thick cottony tufts, nearly globular, about an inch in diameter.

3. *E. polystachyum* (Common Cotton-Sedge).—About 1 foot high, with terminal *umbel* of 2 to 10 or more *spikelets*, the inner sessile, the outer more or less stalked; *hypogynous bristles* very numerous, forming dense cottony tufts, often 1 to 1½ inch long. In bogs and wet places, frequent. Fl. summer.

Three varieties have received specific names, viz.:—

(*a*) *E. latifolium.*—Broad-leaved Cotton-grass, the leaves of which are flattened the greater part of their length. Fr. *Linaigrette à pedoncles rude*; Ger. *Breitbältriges Woll-grass.*

(*b*) *E. gracile.*—Slender Cotton-grass, with very slender leaves, and few spikelets. Ger. *Schlankes Woll-grass.*

(*c*) *E. angustifolium.*—Narrow-leaved Cotton-grass, the leaves of which are between the other two in breadth, and the spikelets more numerous. Fr. *Linaigrette à pedoncules lisses*; Ger. *Schmal-blattriges Woll-grass.*

Mr. Grindon, speaking of *E. vaginatum* and *polystachyum*, says, "These are two of the prettiest plants of the British flora. When in fruit, the large silvery heads present a singularly beautiful spectacle. The desolate flat black moors of the north are enlivened by them for several weeks in early summer, and in the level light of the setting sun they shine like satin." Attempts have been made to use the cotton, and tolerable thread has been spun from it, but the fibres are shorter and more rigid than cotton, and do not bear twisting so well.

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9. Scirpus (*Club-Rush*).

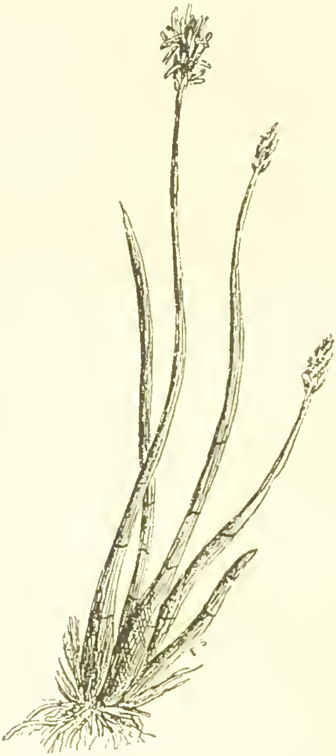
† *Spikelets solitary on each stem.*

1. *S. fluitans* (Floating Club-Rush).—*Stems* long, slender, branching, either floating on the water or forming matted masses at the margin; *leaves* subulate, ½ to 2 inches long; *spikelets* oblong, greenish, not 2 lines long; *hypogynous bristles* none; *style* 2-cleft. Not common. Fl. summer. Fr. *Scirpe flottant*; Ger. *Fluthende Simse.*

2. *S. acicularis* (Needle Club-Rush) (*Eleocharis*).—A slender, tufted annual; *stems* fine, subulate, scarcely 2 inches high, with short sheaths at the base; *root-stock* creeping, thread-like; *spikelet* oblong, dark brown, not 2

lines long; *flowers* about 6 to 8; *hypogynous bristles* 3 or 4; *styles* 3-cleft; *nut* obovoid, slightly triangular. In wet, sandy places. Not uncommon. Fl. summer and autumn. Fr. *Scirpe épingle ;* Ger. *Nadel-förmiges Ried.*

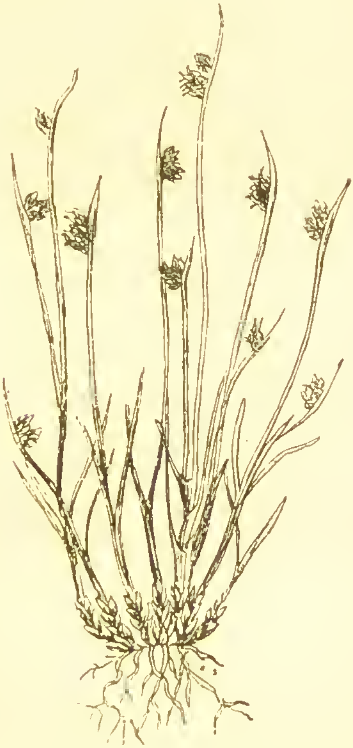
3. *S. palustris* (Marsh Club-Rush).—*Stems* crowded, not 6 inches high at edge of water, a foot or more high and more distant when in water; *root-stock* creeping; *spikelets* terminal, 4 to 6 lines long, oblong; *glumes* numerous, brown, with scarious edges, green on mid-rib; *outer bract* like the glumes, but rather larger; *hypogynous bristles* usually 4; *style* 2-cleft; *nut* obovate, with conical tubercle



SCIRPUS PALUSTRIS (*Marsh Club-Rush*).

at the top. Frequent on edges of pools. Fl. all summer. Fr. *Scirpe des marais*; Ger. *Sumpf-Ried.*

Specimens found on Aberdeen links, with the outer bract broad, and enclosing base of spikelet, have been named *S. uniglumis.* Fr. *Scirpe à une valve*; Ger. *Einbälziges Ried.*



SCIRPUS SETACEUS (*Bristle-like Club-Rush*).

4. *S. multicaulis* (Many-stemmed Club-Rush).—Very like *S. palustris*, but smaller. *Spikelets* rather smaller; *styles* usually 3-cleft; *hypogynous bristles* usually 6; *nut* becoming obovoid and triangular. Not unfrequent. Fl. summer. Fr. *Scirpe à tiges nombreuses*; Ger. *Vielhalmiger Ried.*

5. *S. paucifloris* (Chocolate-headed Club-Rush).—*Stems* slender, many barren, not 6 inches high; *spikelet* small, with not more than 5 or 6 flowers; *bristles* usually 6; *style* usually 3-cleft; *nut* obovoid and triangular, with tapering point. In wet mud. More frequent in the north than in the south. Fl. summer. Ger. *Armblüthige Simse.*

6. *S. cæspitosus* (Scaly-stemmed Club-Rush).—*Stem* 6 inches to a foot high, covered at the base for 1 or 2 inches with imbricated sheaths, the outer brown, the inner green, with narrow leafy tips 1 to 2 lines long; *spikelets* with 6 to 8 flowers, terminal, ovoid, brown, about 2 lines long; the *outer bract* like the glumes, but longer, with an almost leafy tip as long as the spikelet; *hypogynous bristles* about 6; *style* 3-cleft; *nut* minutely pointed. In bogs, frequent in Britain, except some of the southern counties. Fl. summer. Fr. *Scirpe gazonnant*; Ger. *Rasen Simse.*

7. *S. setaceus* (Bristle-like Club-Rush).—*Stems* slender, 2 or 3 inches high, densely tufted, with 1 or 2 short subulate leaves on each stem; *spikelets* ovoid, seldom 2 lines long, or 2 or 3 together, appearing lateral, the subulate point of the outer bract forming a continuation of stem; *glumes* broad and short, dark brown, with green mid-rib; no hypogynous bristles; *style* 3-cleft; *nut* very small, marked with about 8 longitudinal ribs and furrows. In muddy places. Generally distributed. Fl. summer. Fr. *Scirpe sétacé*; Ger. *Borstenförmige Simse.*

8. *S. Savii* (Savi's Club-Rush).—Very like *S. setaceus*, but usually more slender, though sometimes attaining 6 or 8 inches in height; the point of *outer bract* scarcely exceeds the spikelet, and the *nut* is without the ribs and furrows. In wet places on the southern and western coasts of England, west of Scotland, and Ireland. Fl. summer. Fr. *Scirpe de Savi*; Ger. *Nadel-förmige Simse.*

†† *Spikelets 2 or more in a cluster or umbel below the summit of the stem.*

9. *S. Holoschœnus* (Round-headed Club-Rush).—*Stems* stiff, cylindrical, 1 to 2 feet high, or even more, with 1 or 2 stiff leaves sheathing the base; *spikelets* very numerous and small, in 1 or more compact globular heads, forming lateral umbel, the largest stiff outer bract forming a

continuation of the stem. The largest heads, about 4 or 5 lines in diameter, contain upwards of 30 spikelets, of a light brown colour, each containing many flowers; *style* 2 or rarely 3-cleft. North Devon and Somerset. Fl. late summer. Fr. *Scirpe à têtes rondes*; Ger. *Knopfgrasartige Simse.*

SCIRPUS HOLOSCHŒNUS (*Round-headed Club-Rush*).

10. *S. triquetra* (3-edged Bull-Rush).—*Stems* acutely triangular, 2 to 3 feet high, leafless, except that 1 or 2 short sheaths at the base bear a short blade, 2 lines to 1 inch long; *spikelets* ovoid, 4 to 5 lines long, usually 8 to 10 or more, central ones sessile, the others stalked, forming

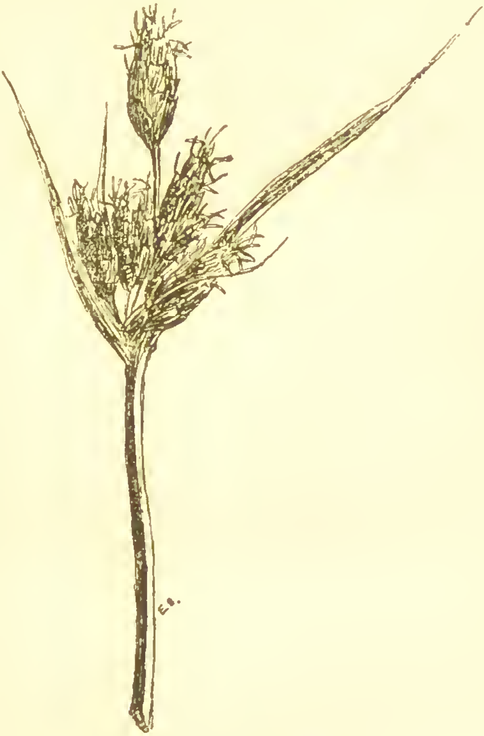
compound lateral cluster, the stiff triangular outer bract continuing the stem for an inch or more; *glumes* brown, broad, notched or fringed at top, with a minute point; *hypogynous bristles* about 5; *style* 2-cleft; *nut* smooth and shining. Fl. late summer. Rare in Britain. Banks of Arun, and Thames, near London. Fr. *Scirpe triangulaire*; Ger. *Pollich's Simse*.

SCIRPUS LACUSTRIS (*Lake Bull-Rush*)

11. *S. pungens* (Leafy-stemmed Bull-Rush).—Very near the last, but rather smaller. There are a few narrow keeled leaves; the *spikelets* are few, usually 3 to 6, all

sessile, in a close cluster. Local. Jersey. Fl. summer, rather late. Fr. *Scirpe piquant;* Ger. *Strechende Simse.*

12. *S. lacustris* (Lake Bull-Rush) (Common Bull-Rush). —*Stems* stout, erect, from 3 to 8 feet high, cylindrical at base, gradually tapering upwards, and sometimes obtusely triangular near the top; there is a single short leaf near the base; *root-stock* creeping; *spikelets* ovoid or oblong, 3 to 6 lines long, rather numerous, in compound lateral umbel, the outer bract continuing the stem; *glumes* numerous, broad, brown, fringed at the edge, notched at top, with a little point in the notch; *hypogynous bristles* 5 or 6; *style* 2 or 3-cleft; *nut* smooth. Abundant in



SCIRPUS MARITIMUS (*Sea Club-Rush*).

in Britain. Fl. summer. Fr. *Scirpe de lacs*; Ger. *See Simse.*

Varieties.

(*a*) *S. Tabernämontanæ* (Glaucous Bull-Rush).—*Style* 2-cleft, and raised dots on the glumes, but these characters are not constant. F. *Scirpe à Tabernaemontani*; Ger. *Tabernämontan's Simse.*

(*b*) *S. carinatus* (Trigonous-stemmed Bull-Rush).—Has the stems rather more triangular at the top.

S. lacustris, with its varieties, is called Bull-rush in some parts of England, but this name is more commonly given to *Typha latifolia.* The stems are used for the bottoms of chairs, for mats, hassocks, and thatching; also by coopers for placing between the staves of casks. Large quantities are imported from Holland. In hot weather the Tartars lie upon mattresses made of these rushes. The roots are astringent.

13. *S. maritimus* (Sea Club-Rush).—*Stems* sharply triangular, 2 to 5 feet high; *leaves* long, flat, pointed, often much longer than the stem; *spikelets* rich brown, ovoid or lanceolate, about 9 lines long; sometimes only 2 or 3 in close sessile cluster, more frequently 8 to 10 in compound cluster, the outer ones stalked; *outer bract* leaf-like, continuing the stem; *glumes* notched, with fine point; *style* 3-cleft; *hypogynous bristles* few. Common round the coast. Fl. summer. Fr. *Scirpe maritime;* Ger. *Meerstrands Simse.*

14. *S. sylvaticus* (Wood Club-Rush).—*Stems* triangular, 2 or 3 feet high; *leaves* long, grass-like; *spikelets* ovoid, dark shining green, not above 2 lines long, very numerous, in clusters of 2 or 3 together, forming a terminal, much branched, compound umbel or panicle, with involucre of 3 or 4 linear leaves; *glumes* keeled and pointed; *hypogynous bristles* usually 6; *style* 3-cleft. Moist woods. Not generally common. Fl. summer. Fr. *Scirpe des bois*; Ger. *Wald Simse.*

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INDEX TO GRASSES.

Agrostis, 7, 28
Aira, 7, 9, 28, 39
Alopecurus, 5, 17
Anthoxanthum, 3, 5, 15
Arrhenatherum, 9, 41
Arundo, 8, 36
Avena, 9, 36

Bamboo, 2
Barley, 2
——, wild, 6, 21
Beard-grass, 6, 23
Blysmus, 62, 84
Brachypodium, 8, 33
Briza, 10, 54
Bromus, 9, 42

Calamagrostis, 7, 27
Canary-grass, 5, 19
Carex, 61
—— acuta, 73
—— alpina, 70
—— ampullacea, 80
—— aquatilis, 73
—— arenaria, 69
—— atrata, 70
—— axillaris, 67
—— binervis, 77
—— Buxbaumii, 70
—— cæspitosa, 72
—— capillaris, 77
—— carescens, 65
—— depauperata, 77
—— digitata, 73
—— dioica, 63
—— distans, 76
—— disticha, 70
—— divisa, 70
—— divulsa, 69
Carex elongata, 65
—— extensa, 75
—— filiformis, 75
—— flava, 75
—— fulva, 77
—— glauca, 79
—— hirta, 75
—— humilis, 64
—— incurva, 70
—— lagopina, 65
—— lævigata, 77
—— leporina, 65
—— limosa, 78
—— montana, 74
—— muricata, 68
—— Œderi, 76
—— pallescens, 75
—— paludosa, 81
—— panicea, 77
—— paniculata, 68
—— pauciflora, 64
—— pendula, 80
—— pilulifera, 73
—— præcox, 73
—— pseudo-Cyperus, 71, 80
—— punctata, 77
—— pulicaris, 63
—— remota, 66
—— rigida, 72
—— riparia, 82
—— rupestris, 63
—— saxatilis, 72
—— stellulata, 65
—— stricta, 73
—— strigosa, 80
—— sylvatica, 80
—— teretiuscula, 68
—— tomentosa, 74
—— vaginata, 77

Carex vesicaria, 80
—— vulgaris, 72
—— vulpina, 68
Catabrosa, 10, 52
Chamagrostis, 4, 13
Cladium, 62, 84
Club-rush, 87, 94
Cock's-foot, 9, 49
Cotton-sedge, 85
Couch-grass, 31
Cynodon, 4, 13
Cynosurus, 3, 9, 10, 48
Cyperaceæ, 61
Cyperus, 62, 82

Dactylis, 9, 10, 49, 51
Darnel, 8
—— Poa, 8
Digraphis, 7, 26
Dog's-tail, 9

Elymus, 7, 31
Eriophorum, 62, 85

False-Brome-grass, 8
Fescue, 9, 44
Festuca, 3, 8, 9, 11, 44
Foxtail, 5

Gastridium, 5, 16

Hierochloe, 10, 52
Holcus, 9, 49
Holy-grass, 10, 52
Hordeum, 6, 21

Kobresia, 61, 82
Koeleria, 10, 50

Lagurus, 6, 23
Leersia, 6, 25
Lepturus, 4, 11
Lolium, 3, 8, 34

Maize, 2
Meadow-grass, 55
Melica, 6, 10, 23
Melick, 6, 10, 23
Milium, 7, 25
Molinia, 11, 60
Moor-grass, blue, 10
Murram, 5

Nardus, 4, 11
Nitgrass, 5

Oat, 2
——, wild, 9, 36

Pampas-grass, 3
Panicle, 4
Panicum, 5, 14
Phalaris, 5, 19
Phleum, 6, 20
Phragmites, 8
Poa, 3, 8, 11, 55-60
Polypogon, 6, 7, 23
Psamma, 5, 16

Quake-grass, 10, 54

Raceme, 4
Rhynchospora, 62, 84
Rice, 2
Rye, 2
Rye-grass, 8

Sand-grass. 4
Schœnus, 61, 82
Scirpus, 63, 87-94
Sea Murram, 5
Secund, 3
Sesleria, 10, 49
Soft-grass, 9, 49
Spartina, 4, 12
Sugar, 3
Sugar-cane, 2

Triodia, 10, 51
Triticum, 8, 31

Water-Whorl-grass, 10, 52
Wheat, 2
Wheat-grass. 8, 31

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